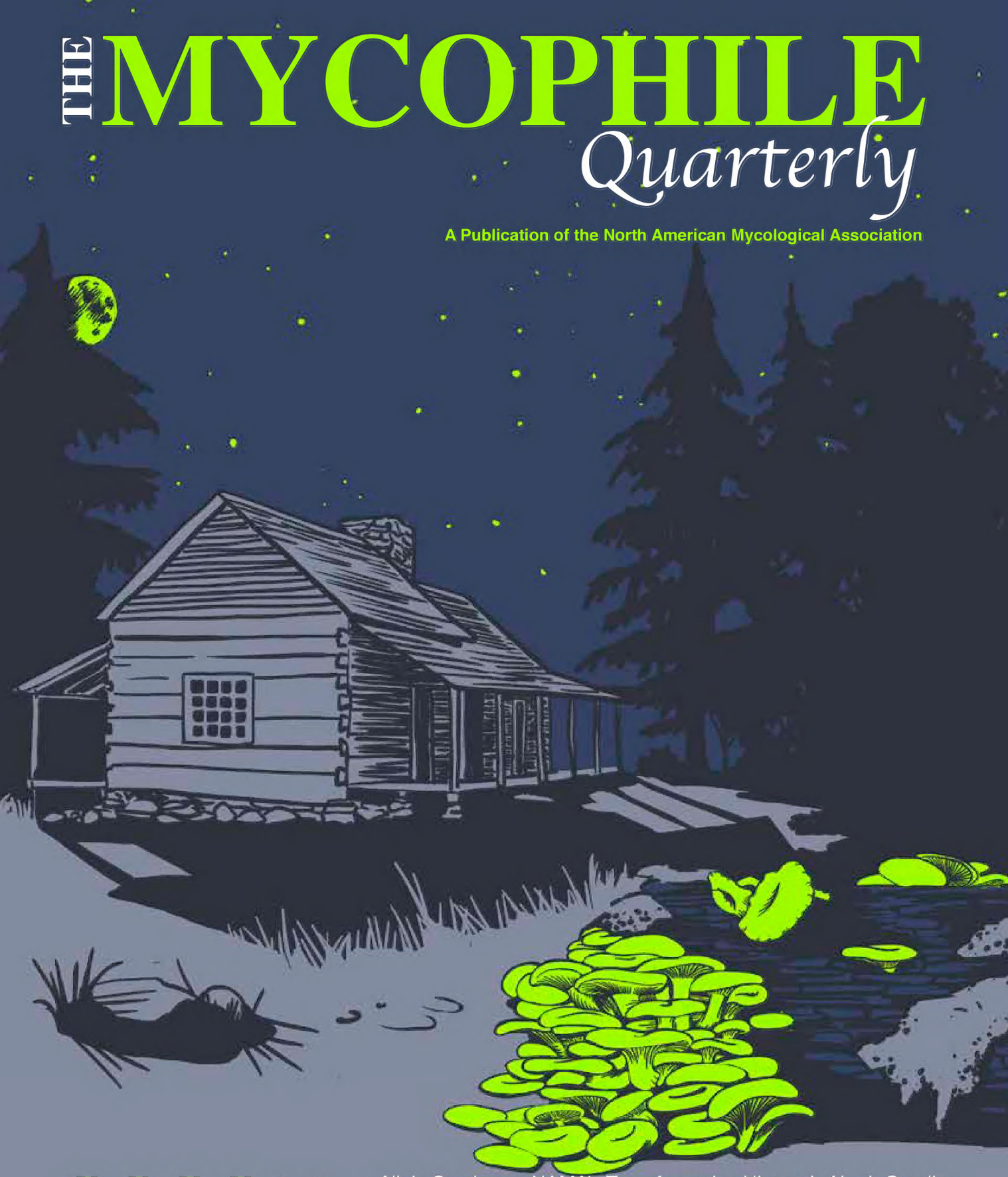
THE MYCOPHILE Quarterly

A Publication of the North American Mycological Association



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Allein Stanley on NAMA's Transformative History in North Carolina
Introducing Jess Starwood's Column
Dave Layton's Delicious Discovery
A Daughter/Mother Book Review

The Mycophile: A Publication of the North American Mycological Association
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Archive copies of the newsletter are available in the Publications section of the NAMA website, www.namyco.org

Please contact Mycophile@namyco.org with your article proposals and ideas. We'll get you published!

Submissions must be received in editable-document format (do not send pdfs), with photos attached separately (not embedded) and photo credits provided.

TABLE OF CONTENTS

Toadstool Picker's Review
NAMA President Trent Blizzard.....4

MYCOLOGY EVENTS

Myco Calendar
Regional and Continental Events.....7

Myco-Opportunities Notes
compiled by Editor Barbara Ching.....8

Announcing the NAMA Visual Arts Contest
Rose Tursi, Visual Arts Committee Chair
Liz Weinstein, Visual Arts Committee.....9

Team Spirit: NAMA Online Store Opens!
Kathy Yerich, Marketing Committee Chair.....12

Instagratitude!
Kathy Yerich, Marketing Committee Chair.....12

NAMA FORAYS

When NAMA First Came South
(and Why We Come Back)
Allein Stanley.....14

What We Found in 2022:
WMS/NAMA Northwoods Regional Foray
Patrick R. Leacock.....16

Appalachia NAMA 2023 Featured Presenters
compiled by Kathy Yerich
Marketing Committee Chair.....20

Debut Column: Notes from the Nomad Forager
The Hunt for Morels in Arizona
Jess Starwood.....27

An Introduction to Mushroom Foraging for Families
Melany Kahn.....29

NAMA EATS

A Taste for Tree Ear
NAMA First Vice President Dave Layton..31

Erecting a Third Culinary Kingdom
reprinted from *The Fungivore* blog
Chef Zachary Hunter.....33

NAMA ETHNOMYCOLOGY

Medicinal Mushrooms in Wound Healing
Hayden Tyler Johnson.....37

NAMA CLUB SPOTLIGHT

Alabama Mushroom Society and its Magical Mycelial Faire
Alisha Millican.....41

NAMA READS

Growing with William Padilla-Brown:
A Review of *Cordyceps Cultivation Handbook Volume II*
Zebediah Raney.....45

Mushroom Rain: A Daughter-Mother Book Review
Saphirra Loiland, Asia Loiland.....48

ABOUT OUR CONTRIBUTORS.....50

Toadstool Picker's Review

NAMA President Trent Blizzard

Here is a quick review of some of NAMA's recent activities, with special thanks to the people who made these things happen.

Membership Software: We are in the final stretch of converting to our new Association Management Software and are already more effective and efficient at managing association business. It is really hard to express how important this software can be to an organization that is striving. Special thanks go to former Web Committee Chair Derek Zeller, who worked long and hard at this effort.

2023 Annual Foray: We planned and launched our 2023 Annual Foray with an entire new team of organizers. Appalachia NAMA 2023 is shaping up to be an excellent event. Special thanks to Sam Landes (former) and Mandie Quark (present) Foray Committee Chairs for leading us through this whole process.

Foray Events Setup: Our new events-management software is promising, easing the admin work of a 400-person event. We prepared a detailed budget and planned positive revenue. NAMA's Executive Committee asked for a 10% margin built-in to protect us from surprise developments or unexpected expenses. Additionally, our local partner clubs will receive a 20% share of any profit, a bevy of scholarships, and discounts due to all their much appreciated volunteer work. Special thanks to Laura Jaegers and Frank Bartucca from the Asheville Mushroom Club, as well as Sam Landes and Cornelia Cho of Mushroom Club of Georgia, Pat Mitchell of Blue Ridge Mycological Society and Kenny Rupert of South Carolina Upstate Mycological Society. Special thanks to Kristen Blizzard for building the budget model and events module.

Regional Foray: NAMA_MX 23: Regional Foray in Mexico is a first for NAMA. It is no small endeavor to plan a boutique foray in a new location. This event checks off all the boxes too: science, scholarship, education, culinary, ethnomycology, mushroom forays and more. Special thanks to Event Organizer Zachary Williams-Hunter for putting this special event together for us and planning the whole thing.

Additional Happenings:
Monthly Book Club meeting (Third Thursday). Thanks to John Michelotti and Eva Gordon for creating this fun and highly relevant event.
A *Chopped*-style scholarship contest created and administered by the Culinary Committee - covered in this issue of *The Mycophile*. Thanks Julie Schreiber.

15+ scholarships offered via forays, committees and member clubs, all funded by our scholarship fund. Thanks to so many members for contributing to that fund for years. We are grateful for Melodie Gates, our treasurer, who does so much.
Art and Design themes were masterminded by the Visual Arts Committee: the Annual Foray logo contest and the upcoming NAMA Visual Arts Contest. Thanks Rose Tursi!
Three new Committees working to get off the ground: DNA Sequence Committee, Conservation and Stewardship Committee, Affiliated Club Development Committee. We will update you on those in upcoming mycophiles.

In the next quarter, the production of Appalachia NAMA 2023 Annual Foray takes front and center. Other projects are building a new website for www.namyco.org and creating the budget for 2023/24.

If you are looking to get involved, or re-involved, here a few opportunities that might tickle your fancy:

NAMA Archive: NAMA has an official archive at the New York Botanical Gardens and we also utilize some digital archive space in our Google Drive. The archive content is extensive, with a long history of personal memories, photos, newsletters as well as official documents. This project is looking for a leader!

Finance and Fundraising Committees are also two opportunities for NAMA to get to the next level. The Finance Committee is charged with setting up proper management of our scholarship funds. The fundraising committee has not been formed, but promises opportunities to raise additional monies we can use for more science and scholarships.
Volunteer at the Annual Foray, **Appalachia NAMA 2023!** We are really counting on a crew of volunteers to help at the foray.
Discussion Group Manager. Help oversee our discussion groups. Includes a bit of content moderation and member management.

As I think about NAMA recently and wonder where we can provide more value to our members, it never hurts to revisit our "Mission and Purpose."

NAMA Mission Statement
The North American Mycological Association (NAMA) is a 501(c)(3) non-profit organization of professional and amateur mycologists with over 90 affiliated mycological societies in the United States, Canada, and Mexico.
NAMA is committed and dedicated to the promotion of scientific and educational activities related to fungi.
NAMA supports the protection of natural areas and their biological integrity.
NAMA advocates the sustainable use of mushrooms as a resource and endorses responsible mushroom collecting that does not harm the fungi or their habitats.

What do you want from NAMA?
NAMA's overall programming falls into ten broad categories:
Taxonomy & Identification
Education
Annual and Regional Forays
Culinary Arts/Mycophagy
Medicinal Mushrooms (including psychoactive mushrooms)
Vouchering Specimens & DNA Sequencing
Visual Arts
Club/Associations topics
Cultivation
Toxicology

With our new Conservation and Stewardship Committee in the works, we should see more energy around sustainability and responsibility. I personally would like to see a bit more toxicology, taxonomy and ethnomycology in the programming. What about you? Please send any recommendation via email, we always enjoy hearing your ideas and they often lead to new programming.

Looking at the mycological associations across North America, there is a huge variety in programming topics. Their "channels" typically feature newsletters, hosted forays and educational sessions, both live and streamed.

The channels used to deliver NAMA programming fall into 8 basic categories:
Website
Social Media
The Mycophile
McIlvainea: The Journal of American Mycology
Webinars
Presentations at Forays
Book Club
Discussion Group

Are there any channels you would like to see added? Even better, any new ones you want to help add to NAMA's mix?

Please reach out via email president@namyco.org with any suggestions or ideas.

Mycology EVENTS

Myco Calendar

Regional and Continental Events

2023

July 7 to 9
Gulf South 2023 Summer Foray, Wiggins, MS
Gulf South Mycological Society

July 20 to 23
Hiles Foray, Hiles, WI
wisconsinmycologicalsociety.org

August 4 to 6
2023 Helen Miknis Memorial Foray, Mont Alto, PA
Eastern Penn Mushroomers

July 30 to August 6
NAMA_MX23: Regional Foray in Mexico, Valle de Bravo, MX

August 11
Annual Foray 2023, Davis, WV
West Virginia Mushroom Club

August 11 to 13
2023 Annual Foray, Alpine, AZ
Arizona Mushroom Society

August 24 to 27
Appalachia NAMA 2023, Hendersonville, NC

September 7 to 10
Northwoods Foray, Cable, WI
wisconsinmycologicalsociety.org

September 14 to 17
2023 NEMF Samuel Ristich Foray Foray, Kerhonkson, NY
Nemf.org

September 30
Twenty-Third Annual Gary Lincoff Mushroom For-ay, Allison Park, PA
wpamushroomclub.org

Myco-Opportunities Notes

compiled by Barbara Ching

The Driftless Folk School

The Driftless Folk School would like to offer NAMA members a special discounted ticket to our upcoming virtual talk, Introduction to Spalted Wood, by Dr. Seri Robinson on August 12.
More details available here: https://bookwhen.com/driftlessfolkschool/e/ev-seyk-20230820130000

For $5 off the ticket price, enter the code NAMA5

Would you like to know more about North American truffles?

The North American Truffling Society (NATS), a NAMA-affiliated club based in Corvallis, Oregon, is always unearthing more knowledge and truffle hunting experiences. Head to their website to sniff out a lovely graphic about truffles in their habitat, (by Gillian Poss), see links to more truffling knowledge, and read their newsletter: *The North American Truffler.*
You can also join NATS from this website: https://www.natruffling.org

Announcing the

2023 Visual Arts Contest

Rose Tursi, Visual Arts Committee Chair
Liz Weinstein, Visual Arts Committee Member

As we enter the 3rd year of the NAMA Visual Arts Contest, we've made some significant changes based on feedback we've received. Previously, the contest has been open to everyone; **starting this year participants must either be a member of NAMA or one of NAMA's many affiliate clubs.**

We've also expanded our categories! Most significantly, **Photography has been expanded from one category to four,** to better accommodate the many photo entries we receive and to more closely fit the spirit of the original Photography Contest. **In addition, traditional drawing and painting are now their own separate categories**. Best of all, this means there will be ten winners this year instead of six!

And finally, we've clarified a few minor details and directly address the controversial subject of AI-assisted artwork. So please carefully read over the new and improved guidelines below and feel free to reach out to visualarts@namyco.org if you have any questions. We can't wait to see your beautiful entries!

NAMA 2023 Visual Arts Contest Rules and Guidelines
All forms of art are accepted; when submitting, please choose the category into which you feel your work best fits. Please see Category Guidelines below.

Rules:
Participant must be either a member of NAMA, or a member of one of NAMA's affiliate clubs (See list of clubs here: https://namyco.org/clubs.php)

1. Each participant may enter up to 6 pieces total in the contest, with no more than 2 entries for any one category.
2. No "adult" content; entries must be "family friendly."
3. Art must visually depict fungi somewhere in the piece and/or use fungi as a component (for example, dyed or painted with pigments made from mushrooms, dried mushrooms in mixed media, etc.).
4. Depictions or use of lichens and myxomycetes (slime molds) are allowed.

By entering, each entrant agrees to allow NAMA the use of submission images in our newsletter, social media, website, printed promotional materials and anywhere else NAMA sees fit. (please include your @name if you would like to be tagged on Instagram).

Prizes:
Ten participants (one winner from each category) will receive a one-year membership in NAMA or a one-year extension of their membership if they are already a member.
Honorable Mentions may be presented for entries found to be of particular interest but are not chosen for an award.

Winners will be announced and notable entries displayed in a slideshow presentation at Appalachia NAMA 2023, NAMA's Annual North American Continental Foray, this year to be held in Hendersonville, North Carolina August 24 to 27, 2023.

How to Submit:
Submit one (1) photo per entry (3D categories may submit up to 3 photos per entry) preferably in .jpg format and in a high enough resolution that it can be projected on a screen without pixelation. File name must be labeled with identifying info such as entrant's name and category (for example: JaneSmith.Sculpture.jpg).
Email your files and any questions to NAMA Visual Arts Committee: visualarts@namyco.org
Include "2023 NAMA Visual Arts Contest" in the subject line and any other relevant info in the body of the email. Please state which club(s) you are a member of; e.g., NAMA and/or its affiliated clubs.
Entries must be received by July 24th , 2023.
Voting will be conducted by an impartial jury of professional artists selected by NAMA's Visual Arts Committee.
We encourage artists to submit a short paragraph with their entries describing species depicted/used, and any other interesting tidbits such as inspiration or process behind the work. We would like to see distinct and real mushrooms represented. Fulfilling this request, along with quality and skill, will play a major role in the selection process.

Category Guidelines:
Traditional Drawing: Pencil, charcoal, marker or ink drawings and any other traditional dry media. May include minor digital touch up.

Traditional Painting: Watercolor, gouache, acrylic, oil and any other traditional wet media. May include minor digital touch up. Special consideration may be given to entries painted with mushroom and lichen-derived pigments.

Mixed Media: Traditional artwork in which more than one medium or material has been employed. This category includes collage, assemblage, etc. Drawings and paintings made on mushroom based papers may be entered here. Art may have some dimension, but any obvious 3D mixed media should be entered under Sculpture.

Sculpture: Includes pottery, sculpture, jewelry, woodworking, miniatures, 3D mixed media and any other dimensional crafts that do not fall under the category Sewing and Fiber Arts.

Sewing and Fiber Arts: Knitting, crocheting, felting, etc. Also includes all sewing, quilting and most wearable art (mixed media and sculpture in which fiber and/or fabric are the primary component should be entered here). Special consideration may be given to entries dyed with mushroom and lichen derived pigments.

Digital Art & Misc: This is a bit of a catch-all category. Includes heavy photo manipulation, digital illustration, digital collage. Animated GIFs as well as short videos under 2 minutes may be entered here. AI-assisted artwork must be entered in this category and must be explicitly labeled as such, including which generator was used.

Photography - Pictorial: This division is for single photos that illustrate the beauty and variety of fungi in form and color. Mushrooms should not be cut or turned over and look natural. Judging criteria include consideration of both technical (focus, depth of field, exposure, lighting, color, absence of distracting elements) and artistic (composition, color, background, lighting) aspects. Obvious photo manipulation discouraged.

Photography - Abstract: This division is for single photos that illustrate the visual features of fungi without attempting to represent the subject in an obvious way. Judging criteria include the same as in the Pictorial category as well as focus on achieving an impressionistic effect via shapes, forms, colors, and textures, and consideration of the many varied details of fungi and their physical features. Consider macrophotography, shadows and light, and skewing the obvious without manipulating the image. Obvious photo manipulation discouraged.

Photography - Symbiosis: This division is for single photos that illustrate the ecological relationship between two species that live in close proximity to each other. Organisms in symbiotic relationships have evolved to exploit a unique niche that other organisms provide such as fungi in relation to creatures such as reptiles, insects, and gastropods for example. Judging criteria include a portrayal of such a relationship in conjunction with composition, color, background, lighting, etc. Obvious photo manipulation discouraged.

Photography - Documentary: For single photographs especially suited as illustrations in a field guide or monograph, or for use in a lecture. Emphasis is placed on portrayal of key morphological characteristics such that the usefulness of the image as an identification aid is maximized. Subjects may be shot in the field, laboratory or studio and the photographer has complete freedom to cut, process, physically manipulate, or orient the specimen in any desired manner to achieve the goal. Close-ups of single features and photomicrographs are acceptable. Judging criteria will be the same as in the Pictorial category but they will be of secondary importance to the overall mycological utility of the photo. Accurate identification of the subject will be a consideration. Obvious photo manipulation discouraged.

Please note that the NAMA Visual Arts Committee may, at its discretion, change the category of an entry or reject an entry that it determines does not fit the spirit of the contest.

Can't wait to see your inspired, inspiring entries!

A small sampling of last year's entries to inspire you

TEAM SPIRIT: NAMA Online Store Opens

Kathy Yerich, Marketing Committee Chair

There is a thing that happens when you work with talented people, a synergy that builds, grows and continues to gain momentum. It's been exhilarating watching the NAMA Committees generate new ideas and launch them into the world for members and non-members to savor. You'll read about many of those endeavors in this issue of the *Mycophile*: The Culinary Committee's *Chopped*-style contest. Most obvious is the Appalachia NAMA 2023 registration opening with the corresponding foray logo chosen from a contest implemented by the Visual Arts Committee, and ALL of this made possible by the talented and hard-working Web Committee!

The latest collaboration between the Visual Arts Committee, Web Committee and Marketing Committee is a NAMA Online Store! The first products feature a design from artist Karen Milnes, who will also be a workshop presenter at the Appalachia NAMA 2023, displaying a remarkable rendition of the *Amanita* shape from the NAMA logo formed from mushroom illustrations!

Currently, there are a couple of standard items (T-shirts and sweatshirts) available, offered in many sizes and colors. Because the creation and delivery is "on demand," meaning the items are individually printed and shipped as ordered, it can take 3 to 4 weeks for delivery.

You can check out the store here: https://shop.namyco.org/

We're compiling logos from past forays to create a gallery of NAMA Annual Foray shirts. So, if you missed a foray but always loved the logo or went to the foray and wore out your shirt, very soon there will be an option to order one! If you are reading this and have access to the logo art file from a previous foray, please email marketing@namyco.org.

Instagratitude!

People consume mushrooms in a multitude of ways, including devouring photos and information on social media! NAMA would like to thank the Instagram Takeover Artists below for their creative offerings to satisfy the cravings and growing appetite for our Instagram Page. The following artists thoughtfully contributed content in March and April 2023.

Alan Rockefeller	@alanrockefeller
Zachary Hunter-Williams	@thefoodbender
NAMA/ TursiArt	@tursiart
Central TX Mycological Society	@centraltexasmycology
Andrew Cannon	@fungus_fairy
Matt Schink	@matt_schink

NAMA Forays

When NAMA First Came South
(and Why We Come Back)

Allein Stanley, NAMA President, 1995-2000

The North Carolina mountains offer a link between the more northern biome and mycoflora and that of the sub-tropical regions of our country. Biologists and mycologists have been attracted to this area because of the diversity of species. As a past president of NAMA, I have a unique perspective on how it became such an attractive "habitat" for NAMA and its mycophiles.

I joined NAMA in 1971 through an application sent to me by Dr. Alexander H. Smith, the acknowledged American guru at that time, the author of the only current field guide available. NAMA was then the tiny remnant of President Dwight Eisenhower's People to People project.

Luckily, I could attend the annual foray that year, where fewer than a hundred members gathered at the Biological Field Station of the University of Michigan. When I met Harry Knighton, NAMA founder and president, he and others immediately began to speculate about how nice it would be to have a foray in the Southern United States. I believe that's why I was put on the Foray Committee.

That committee functioned differently in those days. All members were expected to generate possible foray sites and support any group willing to host.

About two years later, a handful of us began to seriously consider the possibility of holding the annual foray. We had no club; it was just a group of nature lovers, none specifically limited to an interest in mushrooms. We settled on a summer camp for girls, Camp Green Cove, near Tuxedo, NC, owned and directed by Calla and Frank Bell, Sr. Their property consisted of about eight hundred acres. We could use the facilities after the camp season ended, so we decided on September 12 -15, 1974.

We would then have use of the lake, canoes, buses, horses, and other amenities. We also got permission to hunt at other nearby camps and at a beautiful undisturbed mountain forest of over six thousand acres. Regretfully, that site has long gone to development.

By current standards, our accommodations were spartan. The cabins were "open air" with only screens above mid-level. Each cabin held eight cots or bunks, one bathroom, and little else. The central dining hall and other buildings for our use were also "open air." A few members opted for nearby motels, but most of those who came were unfazed (or at least uncomplaining).

To our surprise, we ran a waiting list throughout the months that registrations poured in. They almost overwhelmed our registrar, who took to refolding the envelopes and (re)using them to return registration confirmations or waitlist placement. Eventually, about three hundred and thirty members attended.

Dr. Orson Miller's *Mushrooms of North America* was published in 1972 and due to his experience in the southern woods, we invited him to serve as Chief Mycologist. Dr. Larry Grand of North Carolina State University was Assistant Mycologist. Our recorders were Dr. Esther Dick of Brown University and Dr. Tina Gilliam (Davies) of the USDA. In the end, nine or ten professional mycologists came, a first for a NAMA Annual Foray.

Included were Dr. Smith of the University of Michigan, Dr. Richard Korf of Cornell University, the authority on ascomycetes, Lafayette Frederick, a myxomycete specialist from Howard University, Dr. Kent McKnight of the USDA, Dr. Scott Chilton of Washington University in St. Louis, and Dr. Bridge Cooke, who came on a bus. Memory fades for the complete list, but other notables attended: Dr. Dan Guravich, better known for his work and books on polar bears, came. He later photographed the fungi in *A Field Guide to Southern Mushrooms* by Smith and Weber. I believe this was the first American field guide with a specimen voucher collection for every photograph.

Bunji Tagawa, the renowned illustrator for *Scientific American* magazine and creator of NAMA's logo attended. Bunji offered to draw fungal images on members' fabrics at the foray. NAMA Past President Ike Forester now owns the special shirt that Bunji drew and fixed for President Harry Knighton.

Dr. Sam Mitchel, founder of the Colorado Mycological Society and prime mover in defining mushroom toxins, came. At the time, mushroom poisoning was poorly understood; Sam was instrumental in separating several of the toxins into distinct groups. He and Gary Lincoff later published the first book on mushroom toxins: *Toxic and Hallucinogenic Mushroom Poisoning*.

Our foray mycophagist was Chef Joe Czarnecki, who owned a fine dining restaurant in Reading, Pennsylvania that was famous for serving wild mushrooms that the Czarnecki family gathered. Unsurprisingly, the delicacies he prepared each day of the foray disappeared in minutes.

Kit Scates and Harry Barnhart, whose photography has supported many fungal publications, were more than delighted with this opportunity to capture so many distinct species. The two of them set the tone for future mushroom photographs. Kit was recognized throughout the country for her efforts to teach about fungi and to promote fungal photography.

Already a connoisseur of edible mushrooms thanks to his extensive travels, philanthropist Phil Hanes encouraged our efforts throughout our preparations and not only attended but was generous with memberships for his Winston-Salem colleagues.

And then there was a young upstart, Gary Lincoff, who chaired the Mycophagy Committee.

The 1974 NAMA Annual Foray was named in honor of Dr. L.E. Hesler of the University of Tennessee, who published *The Mushrooms of the Great Smokies* in 1960 and was recognized as *the* Southern Mycologist. We even had a full-size cutout of him at our registration table.

The program was simpler than today. There were forays until late afternoon, a lecture or free time before dinner, and only one or two presentations afterward. The talks centered on using the microscope, the uncommon discomycetes, and Dr. Miller's elucidation of gasteromycetes. Of keen interest was a panel discussion on the current understanding of poisoning.

As the mushrooms poured in, things became chaotic. Even with Dr. Miller, his students, and most of the other mycologists working on identification, it soon became apparent that many of the collections would never be covered. Many members haunted the identified displays while so many unrecognized species emerged. Quite a few went home in baskets to universities to be studied under less pressure.

Our success also triggered other issues: unaccustomed to adult appetites, the camp staff was almost overwhelmed, and we nearly ran out of food on one or two occasions. My son-in-law hardly slept as he spent each night silk screening his foray logo design onto tee and sweatshirts. That was another NAMA first – to have a special design for the foray.

Our host, Frank Bell, enjoyed taking members on "white knuckle" rides through his woods in his two-seater red Jeep, barely squeezing between trees. Alas, there was no relaxing over a late-afternoon toddy. In those days, forays were alcohol-free, a leftover from having been held at university field stations.

The Saturday evening dinner was special. One of my fondest memories is seeing Joe Czarnecki preparing

Map location in North Carolina

a porcini soup for the crowd in a stand-alone boiler and stirring it with a canoe paddle. Afterward, we went to the airy gym to dance off the meal with a square dance, assisted by a competitive dance team from a local high school and a professional old-time band. The event ended after lunch on Sunday with the photo contest awards. That afternoon, we offered a public showing of our finds for everyone in the surrounding community. Several visitors joined NAMA.

This was a breakthrough foray when attendance tripled and the most species ever--over four hundred, was collected and identified.

NAMA returned to Green Cove in 1980, then to nearby Montreat College in 1994, Asheville in 2004 (in conjunction with the Mycological Society of America), and Black Mountain in 2016.

This year's annual foray at Kanuga will be within "spitting distance" of where it all began.
It's bound to be a good 'un!

Editor's notes: You can read an excellent article about Bunji Tagawa and view a cover he drew *for Scientific American*. If you scroll carefully, you will also find a photograph of Bunji.

https://blogs.scientificamerican.com/sa-visual/remembering-bunji-tagawa/

You can find species list for the 1994 and 2015 Asheville forays here: https://www.mycoguide.com/nama/1997_present.html

Voucher Report for the 2022 Regional Foray North American Mycological Association Northwoods Foray, Cable, Wisconsin

September 15-18, 2022

Patrick R. Leacock, NAMA Voucher Collection Project

Summary

The 2022 Regional Northwoods Foray was held September 15-18 at Lakewoods Resort & Lodge, Ca-ble, Wisconsin. The foray was organized by the Wisconsin Mycological Society with the NAMA Foray Committee. Most collecting areas were in the Chequamegon-Nicolet National Forest. Other sites included Uhrenholdt Memorial State Forest, St. Peter's Dome State Natural Area, and Big Bay State Park, Madeline Island.

Many thanks go to voucher crew of Adele Mehta, foray recorder, Patrick R. Leacock, Voucher Coordinator, and NAMA-sponsored student Olivia P. Filialuna (University of Washington. Extra thanks to the assistance of Ariel S. Bonkoski. We thank the board and trustees of NAMA for their continued support of the voucher program. The NAMA voucher specimens are accessioned into the permanent herbarium collection at the Field Museum of Natural History (F), Chicago, Illinois.

This species list has 286 taxa (genus, species, and varieties, comprising 24 ascomycetes (1 lichen and 262 basidiomycetes. The most diverse genera were *Lactarius* (17 spp., *Russula* (15 spp., and *Amanita* (11 spp.). Eleven persons made identifications, including Patrick R. Leacock, Tavis Lynch, Ariel S. Bonkoski, Britt A. Bunyard, Brad T. Knowles, Arne Martinson. Bruch Reed and 4 others.

There are 224 voucher collections preserved from the foray. These taxa have the number of voucher specimens indicated "(1" or "(2". Taxa marked (p have a photo but the voucher specimen molded (26 from a drier mishap or went missing. A guideline for this regional foray with a reduced crew was to save specimens of interest rather than all species. Some of these identified to genus level may be different species. Additional lichens were saved and await identification.

NAMA vouchers with images will be available online on MyCoPortal. Information about the NAMA Voucher Collection Project can be found on the NAMA website:
www.namyco.org/voucher_cœction_project.php

Kingdom Fungi
Ascomycota

Apiosporina morbosa (1)
Ascocoryne sarcoides (1)
Calycella citrina group (1)
Daldinia childiae (2)
Diplocarpa irregularis [Ionomidotis] (1)
Elaphomyces sp. (1)
Gyromitra infula (1)
Helvella crispa (1)
Humaria hemisphaerica (p)
Hypomyces lactifluorum (1)
Hypomyces luteovirens (1)
Leotia lubrica (p)
Neolecta irregularis (1)
Otidea onotica (1)
Pachyella clypeata (1)
Phaeocalicium polyporaeum (1)
Scorias spongiosa (1)
Scutellinia setosa (1)
Spathulariopsis velutipes (1)
Thuemenella cubispora (1)
Tolypocladium capitatum (1)
Tolypocladium ophioglossoides (1)
Trichoglossum farlowii (1)
Xylaria longipes (1)

Basidiomycota

Albatrellus ovinus (p)
Amanita brunnescens
Amanita chequamegonensis nom. prov. (p)
Amanita flavoconia (1)
Amanita fulva (1)
Amanita lavendula (1)
Amanita muscaria (1)
Amanita porphyria (1),(p)
Amanita rhacopus
Amanita stannea (1)
Amanita suballiacea (1)
Amanita variicolor (1)
Ampulloclitocybe clavipes (1)
Armillaria mellea (1)
Artomyces pyxidatus (p)
Auricularia cf. americana (1)
Austroboletus gracilis (p)
Bjerkandera adusta (1)
Boletopsis grisea (2)
Boletus chippewaensis
Calocera cornea
Calvatia craniiformis
Cantharellus cinnabarinus
Cantharellus enelensis (p)
Cantharellus persicinus [C. spectaculus] (p)
Cerrena unicolor (1)
Chalciporus piperatus
Chlorociboria sp.
Chroogomphus vinicolor (1)
Clavaria fragilis [vermicularis]
Clavaria zollingeri (1)
Clavulina cf. cinerea (1)
Clavulinopsis fusiformis (1)
Climacodon septentrionalis (1)
Clitocybe cf. martiorum (1)
Collybia cirrhata (1)
Coltricia cinnamomea (1)
Coltricia perennis (1)
Coprinellus sp. (p)
Coprinopsis cf. atramentaria (p)
Cortinarius alboviolaceus (1)
Cortinarius armillatus (1)
Cortinarius bolaris (1)
Cortinarius caperatus (1)
Cortinarius cf. flavus
Cortinarius squamulosus (1)
Cortinarius vibratilis (p)
Cortinarius violaceus (p)
Craterellus fallax (1)
Craterellus ignicolor (p)
Craterellus tubaeformis (1)
Cuphophyllus virgineus (1),(p)
Cystoderma amianthinum (1)
Cystoderma granosum (1)
Cystodermella cinnabarina (p)
Dacrymyces chrysospermus (1)
Dacryopinax spathularia (1)
Datroniella scutellata (1)
Donkia pulcherrima (1)
Ductifera pululahuana (1)
Entoloma abortivum (1)
Entoloma canescens (p)
Entoloma quadratum (1)
Exidia sp.
Exobasidium vaccinii
Flammulina velutipes (1)
Fomes fomentarius (1)
Fomitiporia tsugina (1)
Fomitopsis betulina (1)
Fomitopsis mounceae (1)

Fomitopsis ochracea (1)
Fuscoporia gilva (1)
Galerina marginata (1)
Ganoderma applanatum (1)
Ganoderma tsugae (1)
Gerronema strombodes (1)
Gloeophyllum sepiarium (1)
Gloeophyllum trabeum (1)
Gloeoporus dichrous (1)
Gloioxanthomyces nitidus
Gymnopilus sapineus
Gyroporus borealis (1)
Gyroporus cyanescens (1)
Hapalopilus rutilans (1)
Harrya chromapes
Helicogloea compressa (1)
Hemistropharia albocrenulata (1)
Hericium americanum (1)
Hericium coralloides (1)
Hohenbuehelia angustata (1)
Hohenbuehelia mastrucata (1)
Humidicutis marginata (p)
Hydnellum aurantiacum (1)
Hydnellum concrescens (1)
Hydnoporia olivacea (1)
Hydnoporia tabacina (2)
Hydnum albomagnum (2)
Hydnum umbilicatum (1)
Hygrocybe cantharellus (1)
Hygrocybe coccinea (1)
Hygrocybe coccineocrenata (p)
Hygrocybe conica group (p)
Hygrocybe flavescens (1)
Hygrocybe punicea (2)
Hygrocybe squamulosa (1)
Hygrophorus aurantiacus (1)
Hygrophorus erubescens (1)
Hygrophorus pudorinus (1)
Hygrophorus russula (1)
Hygrophorus speciosus var. speciosus (p)
Hypholoma fasciculare (1)
Hypholoma lateritium (1)
Hypsizygus tessulatus (1)
Imleria pallida (1)
Infundibulicybe gibba (p)
Inocybe 3 spp. (3)
Inonotus obliquus (1)
Irpex lacteus (1)
Irpiciporus pachyodon (p)
Ischnoderma resinosum (1)
Laccaria cf. bicolor (2)
Laccaria bicolor (1)
Laccaria longipes (1)
Lacrymaria velutina
Lactarius sp. (1)
Lactarius affinis var. viridilactis (1)
Lactarius aquifluus (1)
Lactarius argillaceifolius (1)
Lactarius atroviridis (1)
Lactarius camphoratus
Lactarius deceptivus (2)
Lactarius deterrimus (p)
Lactarius glyciosmus (1)
Lactarius hibbardiae (1)
Lactarius lignyotus (1)
Lactarius cf. pubescens (1)
Lactarius scrobiculatus var. canadensis (1)
Lactarius thyinos (1)
Lactarius torminosus (1)
Lactarius vietus (1)
Lactarius vinaceorufescens (1)
Lactifluus subvellereus [var. subdistans] (1)
Laetiporus huroniensis (1)
Lanmaoa pseudosensibilis (1)
Leccinum holopus (1)
Leccinum snellii (p)
Lentinus brumalis (1)
Lepiota clypeolaria (p)
Leucopaxillus albissimus (1)
Leucopholiota decorosa (1)
Lycoperdon excipuliforme (1)
Lycoperdon pyriforme (1)
Lyophyllum decastes group (1)
Marasmius capillaris (1)
Marasmius oreades
Marasmius strictipes (1)
Melanoleuca alboflavida (p)
Melanoleuca cf. melaleuca (p)
Merulius tremellosus (1)
Mycena leaiana
Mycorrhaphium adustum (1)
Neoalbatrellus caeruleoporus (1)
Neofavolus alveolaris (1)
Neofavolus suavissimus (1)
Neolentinus lepideus (1)
Onnia tomentosa (1)
Ossicaulis lignatilis (1)
Oudemansiella furfuracea (1)
Oudemansiella rubrobrunnescens (p)
Oxyporus populinus (1)

Panaeolina foenisecii (1)
Panellus stipticus (1)
Panus rudis (p)
Paxillus involutus (2)
Peniophora rufa (1)
Phaeotremella foliacea (1)
Phallus hadriani
Phellinus betulinus (1)
Phellinus igniarius (1)
Phellinus tremulae (1)
Phellodon alboniger
Phlebia radiata (1)
Phleogena faginea (1)
Pholiota alnicola (1)
Pholiota aurivella
Pholiota squarrosa (1)
Pholiota squarrosoides (1)
Phyllotopsis nidulans (p)
Pleurotus cf. levis
Pleurotus ostreatus (p)
Pleurotus pulmonarius
Plicaturopsis crispa (2)
Pluteus cervinus group
Polyporus badius (1)
Polyporus brumalis
Polyporus varius (1)
Porphyrellus porphyrosporus (1)
Postia livens (1)
Psathyrella delineata (p)
Pseudoarmillariella ectypoides (1)
Pseudohydnum gelatinosum (1)
Pseudomerulius curtisii (1)
Pulveroboletus ravenellii
Ramaria stricta
Ramariopsis kunzei (1)
Retiboletus ornatipes (p)
Rhodotus palmatus (1)
Russula brunneoviolacea (p)
Russula compacta (p)
Russula dissimulans (1)
Russula fulvescens (1)
Russula grata (p)
Russula integra (p)
Russula paludosa (p)
Russula peckii (p)
Russula pectinatoides (p)
Russula rubescens (1)
Russula sanguinea (1)
Russula sericeonitens
Russula silvicola
Russula variata (1)
Russula virescens group (1)
Sarcodon sp. (1)
Sarcomyxa serotina (1)
Schizophyllum commune
Scleroderma citrinum (1)
Scleroderma sp. (1)
Sebacina schweinitzii (1)
Stereum complicatum (1)
Stereum striatum (1)
Stereum subtomentosum (1)
Strobilomyces cf. strobilaceus (1)
Suillus americanus
Suillus granulatus (p)
Suillus grevillei (1)
Suillus paluster (1)
Suillus spraguei (1)
Suillus subaureus (1)
Sutorius eximius (1)
Thelephora americana Lloyd 1915 (2)
Trametes betulina (2)
Trametes cinnabarina (1)
Trametes gibbosa (1)
Trametes hirsuta (1)
Trametes ochracea (1)
Trametes pubescens (1)
Trametes versicolor (1)
Trametopsis cervina (2)
Tricholoma caligatum (1)
Tricholoma odorum (1)
Tricholomopsis decora
Tricholomopsis rutilans (p)
Turbinellus floccosus (1)
Tylopilus felleus (2)
Tylopilus indecisus
Tyromyces chioneus (1)
Tyromyces fumidiceps (1)
Volvariella bombycina (p)
Xerocomellus chrysenteron (p)
Unknown gilled mushroom (1)
Unknown crust (1)
Unknown pore crust (1)

Appalachia NAMA 2023 Featured Presenters

Kathy Yerich, Marketing Committee Chair

ARLEEN BESSETTE
HOST MYCOLOGIST & KEYNOTE SPEAKER

https://ugapress.org/author/arleen-r-bessette/

Arleen Bessette is a retired psychotherapist, as well as a mycologist and botanical photographer. She has been collecting and studying wild mushrooms for more than forty years. A member of the North American Mycological Association, the Asheville Mushroom Club and The Gulf South Mycological Society, she has published several papers in the field of mycology and has authored or coauthored more than fifteen books including: *Boletes of Eastern North America*, *The Rainbow Beneath My Feet: A Mushroom Dyer's Field Guide*, *Polypores and Similar Fungi of Eastern and Central North America*, and the forthcoming *A Field Guide to the Mushrooms of Georgia*. Arleen has won several awards in the North American Mycological Association's annual Photography Contest, including top honors in both the documentary and the pictorial divisions. Her mycological interests include dyeing fiber with fungi, mycophagy, and the interplay between fungi and consciousness.

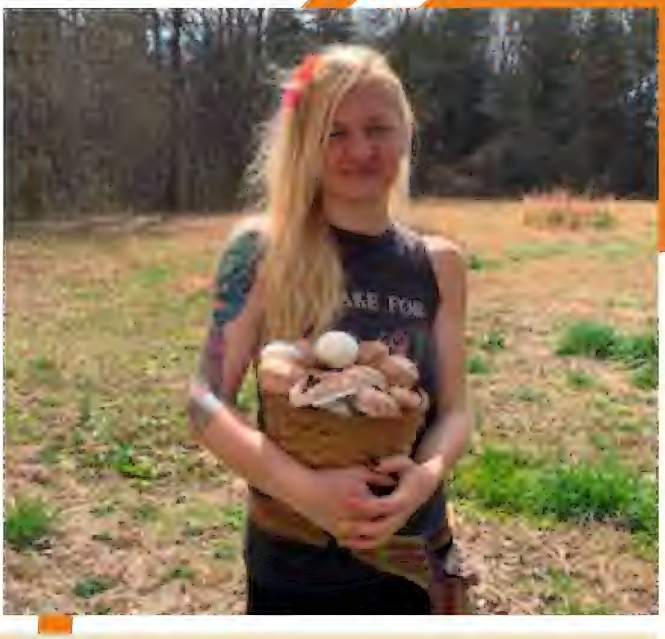
ALAN E. BESSETTE, PH.D.
EMERITUS PROFESSOR OF BIOLOGY AT UTICA COLLEGE OF SYRACUSE UNIVERSITY

Alan E. Bessette, Ph.D., is a professional mycologist and distinguished emeritus professor of biology at Utica College of Syracuse University. A member of the North American Mycological Association, the Asheville Mushroom Club and the Gulf South Mycological Society, he has published numerous papers in the field of mycology and has authored or coauthored more than twenty-five books including: *Edible Wild Mushrooms of North America*, *Mushrooms of the Southeastern United States*, *A Field Guide to the Mushrooms of the Carolinas*, and most recently *Polypores and Similar Fungi of Eastern and Central North America*. Alan served both as a consultant for the New York State Poison Control Center and as the scientific adviser to the Mid-York Mycological Society for more than twenty years. He has been the principal mycologist at national and regional forays and was the recipient of both the 1987 Mycological Foray Service Award and the 1992 North American Mycological Association Award for Contributions to Amateur Mycology.

https://www.mushroommountain.com

I grew up mushroom hunting with my relatives in Bosnia and Hercegovina. When our parents were at work, our grandma watched my sister and I and we had the freedom of being in the woods all day long. At one moment we would be digging up leeches out of the fresh water well and feeding them to chickens, and the next moment, we would get chased by grandma's rooster. But we also spent a lot of time picking boletes, milkies, and other varieties of mushrooms. We'd bring them to grandpa, and he would get rid of the ones he thought were not edible, the rest we would cook on the wood stove and eat them. Skip to now: I am the proud owner of Mushroom Mountain and have an amazing team working with me. We produce mushroom spawn for many different edible and medicinal varieties. We also make several different medicinal mushroom extracts and medicinal mushroom honeys under the name Mycomatrix. Mushroom Mountain also runs a Wild Mushroom Food Safety Certification Program. This program was accepted by Health Departments of 7 states and counting, as well as being endorsed by the FDA.

OLGA KATIC
OWNER AT MUSHROOM MOUNTAIN



DR. JULIA KERRIGAN
SCUMS PRESIDENT & TEACHER OF MYCOLOGY AT CLEMSON UNIVERSITY

https://msafungi.org/julia-kerrigan/

Julia Kerrigan is an Associate Professor in the Department of Plant and Environmental Sciences at Clemson University in South Carolina. She received a BS in Natural Resources from the University of Michigan, Ann Arbor, M.S. in Plant Pathology from the University of Georgia, Athens under the guidance of Charles Mims, and PhD in Plant Pathology from Washington State University under the guidance of Jack Rogers. She was also a post doc in Jeff Stone's laboratory at Oregon State University. The underlying theme in her research is elucidating the basic biology of fungi and their interactions with other organisms.

BEN LEMMOND
PH.D. CANDIDATE AT UNIVERSITY OF FLORIDA
ifas.u /people/graduate-stu-
mond

Ben Lemmond is a Ph.D. Candidate at the University of Florida in Dr. Matthew Smith's lab. Ben's research focuses on biodiversity and ecology of truffle fungi and their relatives, especially ascomycete truffles in the order Pezizales.

JEFF MANGANARO
OWNER AT APPALACHIANGOLD FUNGI
https://www.etsy.com/shop/Appalachiangold?ref=-search_shop_redirect
Cordyceps hunter and breeder working to develop methods to use these fungi in ways that are mutually beneficial to people fungi and the environment

DR. BRANDON MATHENY
PROFESSOR AND CHAIR OF GRADUATE AFFAIRS AT UNIVERSITY OF TENNESSEE

https://eeb.utk.edu/people/p-brandon-matheny/%20
https://inocybaceae.org/index.html
Brandon is a professor at the University of Tennessee in the Department of Ecology and Evolutionary Biology. He is a fungal biologist with a research and teaching focus on systematics and ecology of mushroom-forming fungi. Brandon was a history undergrad at Oklahoma State, received his PhD in Botany at the University of Washington, did a five-year postdoc at Clark University working on the fungal tree of life, and has been a professor at Tennessee since 2008. He is currently working on a systematic revision of the mushroom family Inocybaceae in North America and a floristic treatment of mushrooms in the southern Appalachians.

https://www.KarenMilnes.com
Karen has a studio art degree from the University of Virginia with a concentration in printmaking. Cabin Critter Designs is her print shop and studio in the Highlands of Virginia, specializing in logo design, functional art and home décor. Often inspired by her surroundings, her work trends towards natural subjects and colors and spans many mediums, but she is always willing to try something new.

KAREN MILNES
OWNER AT CABIN CRITTERS

PAT MITCHELL
COFOUNDER & PRESIDENT
OF BLUE RIDGE MYCOLOGICAL SOCIETY

Pat Mitchell, like many of us, is a self-taught amateur mycologist. Originally from a suburb outside of Chicago, he now lives with his wife and three children in central Virginia where, in 2018, he became the cofounder and president of the Blue Ridge Mycological Society. Mitchell also works with the Lynchburg Parks & Rec. as the Mycology Communicator, teaching basic mycology courses, for residents and nonresidents of Lynchburg.

DANNY NEWMAN

Danny Newman is an independent parataxonomist and photographer interested primarily in the systematics of Andean-Amazonian fungi. In addition to several self-directed biodiversity inventorying initiatives, Newman has provided research assistance to graduate students of San Francisco State University, SUNY College of Environmental Science and Forestry, and the University of Oregon, encompassing a combined 13 countries across five continents. Formerly a curatorial intern at the Cornell Plant Pathology Herbarium in Ithaca, New York, and librarian to the Mycological Society of San Francisco, he currently resides in northern New Mexico. Newman's photography can be found on Instagram (@kallampero), with detailed observations on the citizen science platform, iNaturalist (@myxomop).

WILLIAM PADILLA-BROWN
FOUNDER, CEO & CHIEF SCIENTIST OF MYCO-SYMBIOTICS

https://mycosymbiotics.com/

Founder of MycoSymbiotics, William Padilla-Brown is a Multidisciplinary Citizen Scientist practicing social science, mycology, phycology, molecular biology, and additive manufacturing. William is passionate about the myriad uses of cannabis, especially its psychoactive resin. William is constantly in the mix of Contemporary Ritual in a nuanced modern Urban Shamanism, spending his time vlogging for social media, writing, contributing for *Fungi Mag*, researching, rapping, singing, and loving his Beautiful Lady Lydia, their son Leo and daughter Xara. William holds Permaculture Design Certificates acquired through Susquehanna Permaculture and NGOZI, and a Certificate from the Bigelow Laboratory for Ocean Sciences for completing their Algal Culturing Techniques Course. William wrote the first books in English on *Cordyceps* cultivation. William regularly teaches k-12 classes around the United States, for universities including Cornell's Small Farms Program, private clubs, and events, as well as offers private consultations. In 2021 William's research has been sponsored by MUDwtr, and affiliated with Mydecine, Oxford Nanopore, MiniPCR, ExtractCraft, and OmegaBiotek. William and his work have been featured on *Fantastic Fungi*, *VICE*, *Buzzfeed*, *The Verge*, *Outside Magazine, Civil Eats*, *Public Goods*, the book *One Earth*, and much more.

MANDIE QUARK
FORAY CHAIR AT NAMA

https://linktr.ee/mushroom_madman

Mandie Quark, the self-proclaimed Mushroom Madman, walked barefoot to receive her Bachelor's in Chemistry from a tiny eclectic Honors College situated on a historic Maryland river in 2007. She spent the first part of her career studying molecular biology in academia, meanwhile culturing a healthy fascination with mycology on the side. For more than a decade she worked as a biomedical research scientist in Philadelphia at a Top-100 Hospital. There, while earning her Masters degree in Biochemistry from the University of the Sciences, she excelled during screening in a chemical genomics lab. Mandie made the decision to hang up her academic lab coat in 2018 to pursue an alternative career path, including taking macro photos of mushrooms and explaining the mysteries and complexities of molecular mycology to the public. She has been a featured guest on many podcasts. Her series of advanced classes for mycologists were well received by the community. In 2023 Mandie started several new collaborations and is extremely excited about what her future in fungi will hold.

JASMINE RICHARDSON

Jasmine Richardson is a professional microscopist and third-generation farmer. Her father planted the idea of growing truffles in her mind in 2014, and she later established a *Tuber melanosporum* orchard on her family farm in Virginia in 2021. She plans to establish an additional truffle orchard on another farm in North Carolina. When she is not tending to the daily needs of her 70 acres of farmland, Jasmine hosts workshops and talks on truffle cultivation, microscopy, and conventional mushroom growing. She independently studies truffle cultivation through hands-on training and microscopical analysis; she has completed educational coursework in European and North American institutions. She is the former vice president and treasurer of the Microscopical Society of San Francisco. American truffle growers face many challenges and lag far behind commercially successful orchards in Europe and Australia. Jasmine is currently focused on how more accessible microscopical descriptions and images of ectomycorrhizal morphologies combined with DNA analysis can materially assist today's truffle tree nurseries and orchards. She views collaboration, potential regulation, and increased competition amongst tree suppliers as decisive for the future of American truffle growers.

ALAN ROCKEFELLER
CO-OWNER AT MYCENA, LLC.

Alan Rockefeller is an expert mycologist in high demand at mushroom events where he teaches workshops on DNA barcoding, field photography, and fungal microscopy. In 2022 alone, Alan traveled the continent in synchrony with the mushroom seasons, and spoke at over 50 events in the span of a single year. Committed to his cause, Alan has been studying fungal diversity for more than two decades, and since 2001 he has photographed more than 2,500 species of fungi. In order to discover new fungi, and spark interest in the hearts and minds of those new to the field, Alan regularly leads forays all over North America, including Mexico where he has been studying the mushroom diversity for 15 years and is consequently bilingual. This March, Alan conducted field work in the Amazon rainforest in Ecuador where he sparked collaborations with several field researchers and even helped the national herbarium identify their accessioned specimens. Alan's contributions to community science have been widespread, and his dedication to teaching thousands of people over several years how to extract and amplify the DNA of their mushroom finds for sequencing is remarkable, and remains unparalleled. Eventually Alan hopes to be able to offer free barcoding services to the mycology community via his newest endeavor into nanopore sequencing. As of today, Alan has uploaded more than 700 of his own fungal DNA sequences to Genbank, and he is a co-author on several scientific papers, including publications documenting new species of bioluminescent Mycena and Psilocybe. Alan is also devoted to the art of macroscopic mushroom identification and legitimately spends hours each day identifying mushrooms for the general public. Amazingly, he has identified over 250,000 fungi on websites like iNaturalist, Mushroom Observer, and various Facebook Groups. Nothing short of a powerhouse, Alan Rockefeller is an authority on the leading edge of mycology, who is beloved by his community for the knowledge and value he contributes to the field.

STEPHEN RUSSELL
PRESIDENT OF HOOSIER MUSHROOM SOCIETY

Stephen Russell is a mycologist from Indiana working on a biodiversity survey of all the macrofungi (mushrooms) that occur in the state. He founded The Hoosier Mushroom Society in 2009 and is currently the President of the organization. His initial interest in mushrooms began with cultivation, which led to writing a book titled *The Essential Guide to Cultivating Mushrooms* (Storey Publishing, 2014). He has chaired the NAMA Mycoflora Committee and was a co-founder of the North American Mycoflora Project. Stephen's current project is a citizen-science- and DNA-based exploration of continental macrofungal biodiversity, which has now generated tens of thousands of new DNA-sequenced collections of fungal collections. https://mycota.com/

RYTAS VILGALYS, PROFESSOR OF
BIOLOGY DEPARTMENT AT DUKE UNIVERSITY

https://sites.duke.edu/vilgalyslab/
Rytas Vilgalys' lab at Duke University studies natural history of fungi, including their genetics, ecology and evolution. Together with his lab group, Vilgalys has published over 200 scientific articles, with over 28,000 citations. Their current research program employs genome sequencing and metagenomics to 1) identify communities of fungi associated with forest trees, including pines, poplars, and eucalypts; 2) investigate molecular functioning of fungal communities with their tree hosts using multiomics tools.These studies have broad relevance for understanding genetics of plant-fungal interactions (symbiosis), microbial ecology of forest ecosystems, and invasive biology of introduced species.

DR. KRISTEN WICKERT
@KAYDUBSTHEHIKINGSCIENTIST

https://www.patreon.com/Kaydubsthehikingscientist
Over the past eight years Dr. Kristen Wickert has utilized the social media app Instagram to educate the general public on the natural world around them. The posts to her personal Instagram account, with the username @KaydubsTheHikingScientist, include information about organisms and conservation efforts to expose the public to the world around them, especially in the wild and wonderful world of Appalachia. She focuses on the core concept that we can all contribute to caring for our ecosystem in our own backyards by avoiding planting exotic or invasive species and instead reintroducing native plant species that allow our landscapes to be habitat for native fauna and fungi. Her educational background includes a bachelor's in Forest Biology and a master's and PhD in Plant Pathology. Her master's work focused on endophytic and plant pathogenic fungi in Eastern hemlock needles and their ability to act as facultative entomopathogens against the devastating insect, hemlock woolly adelgid. During her PhD she researched plant pathogenic fungi in controlling the invasive tree-of-heaven. Photo by Damon Tighe

Notes from the Nomad Forager: The Hunt for Morels in Arizona

Jess Starwood

Despite spending my childhood summers running around the forests of northern Arizona, I don't recall ever seeing a mushroom. In a state known mostly for its hot and dry climate, deserts and rocky canyons, it was the last place I would imagine fungi to grow, much less a morel..

It wasn't until my early thirties, while living in California,that I was introduced to these fruits of the forest. Of course California was abundant with mushrooms most of the year so I spent many seasons going up to the Sierras to hunt porcini and morels in the late spring, huge chanterelles along the coast in the winter, and black trumpets, yellowfoot and hedgehogs in early spring. I only went back to Arizona to visit family.

In 2016, on social media, I met a member of something called the Arizona Mycological Society (AMS). Unfamiliar with mushroom clubs, I naively pictured people walking around a desert full of saguaros and scorpions while they looked for the chance puffball, or maybe a shaggy mane. In other words, not that exciting. But then I was invited to hunt chanterelles along the Mogollon Rim. This opportunity piqued my interest and blew my mind. My family and I had driven past this spot for years on the way to our summer cabin. My parents, both Arizona natives, spent much of their free time roaming these forests but never had a thought about mushrooms.

Years after my first mushroom hunt in the Arizona forests, I began to hear murmurs of morel stories. Again, I was pulled back to my home state. For a few years, I scoured cottonwood habitats and river banks in search of Morchella americana–but I had no luck. For many, it makes a fruitless foray, costing years and many miles of empty baskets. But as with any other mushroom, and anywhere else, success depends upon the perfect formulation of timing, conditions and effort.

As it turns out, northern Arizona isn't the only Arizona hot spot for morels. Mushroom hunter Hernan Castro shares that the sky islands of the southern part of the state, such as Mount Lemmon, can often harbor them, especially after recent wildfires. He has had decent luck with lower elevation morels like Morchella tridentina and M. prava along the cottonwood habitats.

Sometimes, members of AMS have better than "decent luck". Some look back at 2019 with a smile and a tear in their eyes. Mike Dechter, past president of AMS, and current board member Brent Ewasiuk, led a small foray that spring that required a long trek away from any nearby town but resulted in every person bringing home over fifty pounds of morels that day – a total of over 700 pounds. Member Jason Sartor decided to attend this foray when Mike announced "this may be a once in a lifetime experience" and he was not disappointed.

Current AMS president Michael Colosimo longingly reminisces on that season as well: “as mushroom hunters, we all know how pinecones can fool us into thinking we stumbled upon a treasure trove of morels. Well, that year there were more morels than pinecones! I distinctly remember telling everyone I knew to get to the north rim as soon as possible, I was even committing the cardinal sin of mushroom hunting, sharing GPS coordinates online. There were that many morels, enough for everyone,” he recalls.

While I missed out on the epic 2019 foray, this spring, I finally found my first Arizona morels against the backdrop of Sedona’s striking red rocks, cypress and prickly pear. It was far from an abundant harvest, but still a long-awaited triumph. Much gratitude to Brent Ewasiuk and Neoh Tudo for leading the hunt. picture As I load up my Jeep for a month packed full of morel-hunting trips in Arizona and California, I’m hoping for the right conditions and timing to be on my side. Colosimo reports that conditions are looking good for the season as we near the threshold, “I have high hopes for the 2023 season. We may not see one like 2019 again anytime soon, but this year could be close!”

Arizona Mushroom Society members flaunt their morels; Jess Starwood on left.

An Introduction to Mushroom Foraging For Families

Melany Kahn

I spent ten days in California this past January, offering mushroom education to kids and families. The forays I created for little ones and their adults were so mush-fun. High attendance numbers at the San Francisco Fair and the Los Angeles Fair reinforced my belief that families are hungry for mushroom education for every age group and level. The appetite for fungi education seems insatiable at other venues such as schools and nature and environmental centers, so I am excited about the work NAMA's Education Committee does to open the wonderful world of fungi to youth and families.

As readers of the *Mycophile Quarterly*, you share a sense of passion for fungi, even a zeal or, as I like to describe playfully, "Mushroom foragers are somewhat kooky about their pursuit" I am a second-generation forager and my parents were nutty about amateur mycology. My mom even insisted on being buried with shitake spores thrown in with the dirt on her mountainside grave, so she could return as a mushroom! My son Mason started foraging as a wee thing, pacifier in hand. I am equally enthusiastic, having written a children's book, *Mason Goes Mushrooming*, on the benefits of foraging for edible mushrooms with kids as young as babes in arms.

But why in the world should you want to start foraging for wild mushrooms with young children?

Well, because mushrooms, at their essence, teach us about connectivity, and this connectivity fuels our desire to maintain the planet and our communities.

Foraging infuses us with a connection to our natural world, especially when foraging happens in a familial setting where we create the opportunity to pass our love of our Earth to the next generation.

A foray triggers sensory experiences that no classroom or software can match. Can you imagine what it would be like for our children and our environment if they were as connected in nature as they are to technology? Walking slowly in the woods has that potential. It awakens children's five senses: they hear birdsong, they can smell and touch the ferns, taste the birch bark, and surprise a salamander under a mushroom.

Fortunately, NAMA's Education Committee creates a community for both the newbie and the expert mycologist. We recognize how essential and generous mushrooms are to the human race: without fungi, we wouldn't exist. Fungi decompose, enrich our soil; make our beer; make our bread and contribute to our medicine. By providing mycological education, we can balance the need for caution when collecting mushrooms with care and tradition.

I always recommend that families wishing to delve into mycology join their local NAMA-affiliated mushroom club and go on a foray. These events happen every weekend across the North America, immersing attendees in the oral tradition provided by fellow mushroom foragers who are happy to share their knowledge and joy. Plus, at the end of the treasure hunt, you can walk out of the woods with a basket full of the most delicious umami-flavored mushrooms, new friends, and a deeper understanding of the environment in your own neighborhoods.

Melany Kahn leads a children's mushroom walk in Vermon.

I also encourage folks to simply collect a basket of mushrooms in their neighborhood – not with the specific purpose of eating them – but just to touch them, smell them, feel them, break them up, look at their structure, look at their spongy bottoms or gills or slimy surfaces. Look at what they grew out of – moss? Leaf litter? A downed log? Photograph them. Spore-print them. There are so many fantastic educational experiences you can create.

Lastly, I encourage each of you to lean in for a deeper connection on one of NAMA's committees, like the Education Committee. Future generations of young foragers will benefit from our work today, just as we benefited from mycologists who generously shared their knowledge with us.

The Senegalese environmentalist Baba Dioum underscored the connection between education and conservation in his speech to the United Nations General Assembly: "In the end, we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught."

As mycophiles, we have all experienced the joy of fungi. It is now essential that we also teach it.

NAMA

A Taste for Tree Ear

NAMA First Vice President Dave Layton

Dried: local tree ear left. *A. cornea* right

When I first ate tree ear mushrooms, *Auricularia auricula*, I thought they were flavorless. But I wanted to avoid making the mushroom mistake of giving up too soon, so I'd toss a few tree ears mixed with other mushroom varieties in spaghetti or soups and still be underwhelmed. Occasionally I'd sense a pleasant noodly texture and mushroom flavor in their blandness, but often I'd get an insipid flavor of dirty socks. The last time I tasted dirty socks was when I scratched my older brother's new Led Zeppelin album." So, I gave up on Iowa wood ears.

Decades later, during a 2009 trip to the Tianjin district of China, I learned I had made mushroom mistakes after all: I should have been harvesting tree ears more selectively and preparing them differently. Since Sally (my future wife) was working there, I had plenty of time to visit the giant open-air market even though it was mid-winter. The variety of fresh and dried fungi, including dried black fungus, astounded me. I got on the computer and learned that the black fungus was a type of tree ear.

I tasted it when we went to a "Hot Pot" restaurant. At these restaurants, they bring each table or individual a little pot of boiling broth with a sterno fire. Then customers order a variety of vegetables, meats, noodles, and fungi to cook in the broth. I chose the black fungus with a few other varieties. It came in dark strips. When I pulled it out of the hot pot, it was like gelatinous flat noodles with a light mushroomy flavor, and it looked unmistakably like the tree ear fungus I'd seen in the Iowa woods.

Back in Iowa, I found some ear fungus that emerged in dry weather and quickly dried on the tree. It was nearly as dark as the dried Chinese "black fungus." I reconstituted some and tried it. It was like what I remembered from China....but not quite. In the next batch, I decided to harvest the wood ear earlier in its life cycle, before it had long exposure to the elements. I watched new tree ears emerge from that same tree and others in late May or early June. The young fresh tree ear tasted faintly spicy and mushroomy, much more like the Chinese black fungus. Young fresh tree ear dried in the dehydrator was even more like black fungus, especially the texture when reconstituted.

Having come close to the taste and texture of the Chinese tree ear, I realized that the dishes I was making at home differed in a crucial way from my favorite Chinese dishes, which helped me remember why I liked black fungus so much in the Chinese Hot Pot restaurant. The main ingredient in the pot was the noodle-like fungus and so, in my kitchen, I needed to think of tree-ear-like noodles as the main ingredient rather than mushroom bits buried in the recipe.

That June, tree ears were growing rapidly. I was soon harvesting tree ears that were four inches or more wide and they still tasted fresh! I cut them into noodle-like strips and used them with equal amounts of cabbage as the main ingredients in a delicious stir-fry. Sally and I were soon hooked. I also dried a lot to use later. I like them more dried and reconstituted.

After a few rainfalls, I returned to those woods and saw how the remaining tree ears had changed; even though they still looked fresh, my other senses told me they weren't fresh. In my hands, they sloughed apart and were floppier. They smelled like dirty water, no longer faintly spicy and mushroomy.

Eareka!

I now was certain that I should only harvest the freshest wood ears even if they would go straight to the dehydrator and later into steaming broth.

Recently I discovered more good news about Iowa tree ears. A friend gave me a bag of mixed dried mushrooms he uses in the restaurant he owns. One species listed on the bag was black fungus. However, it was thicker than our local tree ear, with white fuzz on one

side. I learned that this mushroom fits the description of *A. cornea* (cloud ear fungus or hairy black fungus) and is highly prized for its crunchy texture. It's preferred in soups rather than in stir-fry. Apparently, Chinese cooks use different kinds of black fungus for specific recipes.

They're tree ear connoisseurs!

I wondered how our local tree ear stacked up with the prized cloud fungus. Was our local tree ear a cheap American knockoff?

It was time for another experiment, which compared the dried cloud fungus to dried local tree ear fungus. It didn't soak up the water like mine when rehydrating but it tasted the same. It was also thicker and much tougher (crunchier?) once rehydrated. The white fuzz now merged into the sporocarp, giving it a bumpy texture. The thickness and texture were the only ways to visibly distinguish the reconstituted cloud fungus from our local wood ear.

I simmered both species separately in Sally's home-baked chicken broth. After a bite of each species, I formed an opinion, but I needed a better understanding of the intricacies of fine dining, so I deferred to Sally's more refined palate. "That's tough!" she exclaimed of the cloud fungus. "Do you mean like wonderfully crunchy?" I asked. She gave me a look, gave our tree ear a bite and said, "Oh, that's much better and plenty crunchy for me. I want more of that!" So, we simmered some more reconstituted local tree ear for 8 minutes in her chicken broth, then melted in a little butter and fried 4 eggs over easy for an exquisite breakfast.

The aroma that wafts up when you add tree ear to a simmering broth will resolve all your doubts about the culinary value of this fungus.

Our experiments have led us to conclude that if cloud ear is highly prized in China, then our local tree ear should be considered the peak of gourmet delicacy! I could make a career of leading people to secret tree ear locations or sell maps to the best tree ear forests. Who am I kidding? It grows anywhere there's boxelder and or elm, which is pretty much every scrub woods in Iowa – and in many other states.

So go out on your own, try some local tree ear, and become a tree ear connoisseur.

Erecting a Third Culinary Kingdom

Chef Zachary Hunter

I recently made the proposal in a fit of faux outrage that mushrooms are disrespected by being shelved in nearly all cookbooks unceremoniously under "Vegetables." And this isn't just my imagination: from illustrious home science cookbooks such as "On Food and Cooking" by Harold McGee, to "The Food Lab" by J. Kenji Alt-lopez, to the physical locations of mushrooms in grocery stores, our collective biases, perhaps fueled by misunderstanding, have forced mushrooms into the vegetable section.

You often find the missive "mushrooms are not true plants," as if this were enough to then disregard the factual data which show that not only are fungi definitively not plants, they are evolutionarily older than plants, in fact the progenitor of Kingdom Plantae (Fungi are also the evolutionary progenitor of Kingdom Animalia as well). If anything were fair in this world, vegetables would be a footnote in the fungus section of the cookbook. Maybe not, but such is the depth of my outrage in discovering such bias not only throughout the body public, but also in my own intellectual comprehension. The battle to erect a Third Culinary Kingdom just became personal as well, as I see bias within me melting away.

Now wait a minute, you say, there is no "Fungus" section in cookbooks. That is true.

Not yet, at least.

In a recent conversation as I began advocating for a Third Culinary Kingdom to be added to all culinary literature, it seemed a simple task to simply pull all of the information we have collected on cooking mushrooms, in all their varied forms, from the vegetable section and simply create a new section. My initial desire to write this book began as a quest to expand the information on specific mushroom fruiting bodies, and collect the data to one digestible location and volume. But would this new section only include recipes for the 30 or so mushrooms – wild and cultivated – that we utilize in cooking?

As I began to realize, the answer to this quandary is actually far more complicated and considerably more exciting. To illustrate this excitement, we need to take a step back in time, for this episode of Throwback Thursday.

As has been detailed in previous posts, the difference between mushrooms and fungus is an extremely important distinction. When we talk about the Fungal Kingdom we are not simply talking about mushrooms, though they are the most visible and obvious avatar for the entire bunch, but referencing the Kingdom itself. Just as the animal kingdom covers everything from shrimps to horses to humans, the Kingdom of Fungi covers all things fungus, from the undescribed undersea molds that help degrade fish, all the way to the beautiful variety of the the fruiting bodies with which we are so familiar.

I have to admit that I have been speaking incorrectly when giving my recent presentations. One of the more interesting aspects of human and fungal evolution, is that it appears – in direct contrast to the apple or corn or other widely cultivated food stuffs that have evolved with us

– that both lines existed in parallel to one another, and developed as they have without any type of evolutionary pressure in either direction. This is true only so long as one sees the fruiting bodies of mushrooms as the only representatives of our culinary interactions.

The point is well illustrated by the human relationship with the plant maize – what we call corn. Maize was a small granular form of grass that produced a tiny (2-3cm maximum) single seed pod per plant – called teosinte – a mere 11,000 years ago. Through selective cultivation this tiny source of scant food was transformed into the five different distinct genetic varieties of maize still in use today, and within these five varieties, the hundreds of phenotypic varieties as well. The result is the multi-colored and variety of shapes that are as numerous as there are valleys in Oaxaca. This one plant has allowed for the expansion of human settlements throughout Mexico and all of the Americas, and is a staple part of the human diet all over the globe. There is no question that maize/corn was and remains one of the most important symbiotic relationships humans have formed in our recent past.

As the most telling contrast with edible mushrooms, the morel (*Morchella* spp.) – as detailed in an earlier post – evolved in their current form 129 million years ago, in the early Cretaceous Period, at a time when dinosaurs would still rule the earth for another 65 million years. Yes we eat morels, but we do not rely on them. And we help disperse their spores; but they do not rely on us.

And so I have stated in my talks on the science of cooking mushrooms that we operated in parallel. But I am sorry to say that I have been wrong, and I apologize for allowing the bias against fungus that I am constantly fighting to keep from creeping into my own observations.

Fungi and Recent Human Evolution

It would be a very different world indeed if we had not isolated penicillin from a moldy cantaloupe mid-WWII. Perhaps the Allied Forces would not have won the war; perhaps the diseases that tend to aggregate in hospitals would have wiped out a significant portion of the population much earlier. Penicillin, the collective name for antibiotic medicines derived from various strains of molds – the Penicilliums, all fungi but none a mushroom – indisputably affected human evolution, though being inside the affected/surviving group, it may be hard to say with certainty what the result would have been had we not made our alliance when we did.

Curiously, strains of *Penicillium* mold were already being used in cheese making and cured meats long before its ubiquitous use in modern medicine. “Mould ripened cheeses include semi-hard cheese – e.g. Stilton, Roquefort – in which the ripening agent, *Penicillium roqueforti*, grows in the interior of the cheese, and also soft cheese of comparatively small size or shallow depth – e.g. Camembert or Brie – in which the mould – ripening agent *P. camemberti* or more usually *P. caseicolum* (*P. candidum*) grows on the surface of the cheese” [THE MICROBIOLOGICAL EXAMINATION OF CHEESE, W.F. Harrigan, Margaret E. McCance, in Laboratory Methods in Microbiology, 1966]. Though data would prove hard if not impossible to gather, the preponderance of evidence would suggest that by extending the shelf life of dairy and meat products, we humans were able to expand our empires more effectively. Research shows that the molds we use for cheese production produce fungal toxins in the lab, and some tests have shown extensive liver damage to lab rats when exposed to the toxins produced by *Penicillium roqueforti*, the primary mold used in blue cheese making. But despite the toxins in isolated cultures of these molds, they have never been found in food products. Some toxins are apparently broken down by their interaction with the dairy products. So not only are we extending the shelf life and perhaps nutritional content of our food, we are also making the molds that are otherwise toxic and intrinsic components of our diet. [MYCOTOXINS I Classifications L.B. Bullerman, in Encyclopedia of Food Sciences and Nutrition (Second Edition), 2003].

Stepping back even further in the human evolutionary line, there is much data to support the idea that fermentation, or at least the processes used to make fermented products, including boiling the water used, saves lives. In large settlements – especially since developing agriculture in the most recent 15,000 years – water is often tainted and a carrier of various diseases. The safest source of hydration was instead early beer and wine, due to the active boiling of the wort and the introduced living cultures actively working in our favor, increasing the nutritional availability of the fermented grains and other components. Mead, perhaps some of the oldest recorded intentional fermented beverages made from honey, contains all of the health benefits of the fermentation as well as the healing nature of honey itself.

Of course, the yeasts used for alcohol production are similar to the yeasts used in the rising and fermentation of bread, both commercially available and also the sourdough cultures in kitchens around the globe. Yeasts are perhaps the smallest characters in the fungal kingdom: diminutive eukaryotic single-celled organisms that feed

on sugars, and are populating the air, the surfaces of almost everything living, and ubiquitously distributed everywhere around the globe. Early fermentation wasn't an exception, it was the rule. Not only has fermentation been naturally occurring since long before humans arrived on Earth, but fermented products have a long history of use in the animal kingdom, as well. There are flocks of birds that will populate fruit trees and wait for the fruit to ferment, and imbibe in alcohol-fueled revelry. The same is true of apes, elephants and other creatures in our shared kingdom. While we don't have the language to know if animals were aware of the health benefits of fermented products, they were certainly benefitting from these aspects, and we know that all of evolution is a meandering path from successful accident to successful accident.

Erecting a Third Culinary Kingdom

Since before we recorded cooking methods, multitudes of unnamed mothers have provided wisdom and nutrition from the kitchen when recipes were understood by action and passed down by oral tradition, our species partnered with fungi in everything from bread to cheese to wine, to the wide variety of pickles, koji ferments (shoyu, miso, tempeh, etc.), to cured meats. Not only did the preservation of fermented products extend portability of products, but the changing flavors and unintended new chemical suites created by these natural processes inspired new methods of cooking and new cuisines while keeping us healthy, delivering safe products that also had healing and immune-balancing properties that we see in many species of edible fungus throughout the fungal kingdom.

One of the main battles of my project is fighting through the intrinsic biases in mycophagy. Cookbooks and authors betray their readers in unseen biases all the time, presumptively placing mushrooms in the vegetable section without a thought. And in writing this piece, I am taking responsibility for my own betrayal, my own biases. I am both ashamed and overjoyed to see my blindspot exposed: to say that fungus and humans evolved in parallel is only true if mushrooms are the only part of the fungal kingdom we examine.

And so, if we are to truly honor the role that fungus has played in our culinary development by gifting this most ancient kingdom its rightful place in our cookbooks, it would be far from just an expose on how to prepare and utilize mushrooms in the kitchen. We would find ourselves perhaps rearranging our entire body of cooking literature to place all of the above mentioned items squarely in the Fungal Kingdom section of cookbooks:

Yeast breads and sourdoughs

Beers, meads, sake, wine and other alcoholic beverages

Inoculated cheeses

Lacto-fermented pickles

Various ferments & cultured foods

Koji products: from miso to garum to shoyu to tempeh

Cured meat products such as salami, etc, which has penicillin or koji on the outside of their skins, helping to protect and dehydrate the hanging meats.

AND of course the multitude of wild and cultivated mushrooms of which I am so fond.

By acknowledging the hugely ignored role of fungus in our culinary heritage, we are actively working through our own bias that mushrooms are the entirety of the fungal kingdom, or that we can choose whether or not we interact with fungus as we exist and eat. Of course avoiding any contact with fungi is achievable, but as Paul Stamets has said time and time again: when the going gets rough, the organisms that partnered with fungi survive the worst again and again.

As it turns out, Erecting a Third Culinary Kingdom is not so much a mission to collect the disparate science on cooking mushrooms from around the scientific borderlands, but a recognition that we have integrated many of our processes with fungi already, and that by acknowledging the role they have played and giving them their rightful place in our culinary lineage, we will find that the Fungi Section of the cookbook already exists, but is dispersed throughout the pages in print.

NAMA

ETHNOMYCOLOGY

Medicinal Mushrooms in Wound Healing

Hayden Tyler Johnson

Much of the mainstream focus on medicinal mushrooms in podcasts, ads, web articles, books and social media revolves around things we ingest like pills, powders, tinctures and sautéed sporocarps. This article will explore a different aspect of medicinal funga – their application in healing wounds – by examining the influence fungi had on ancient peoples.

People have most likely been using fungi since we first evolved.[1] For as long as humans have existed, humans have been getting injured. Like many of us today, our ancient ancestors knew that limiting bleeding and infection was paramount for survival. Our ancestors didn't have the broad body of scientific knowledge or analytical equipment that we have today, but this didn't stop them from discovering the antibiotic, antifungal, anti-inflammatory, styptic (i.e., causing bleeding to stop), pro-healing properties of many medicinal mushrooms. Ethnomycological reports reveal that many cultures around the world have used fungi to staunch bleeding, prevent infection and promote wound healing. After researching the topic of mushrooms for wound healing, I have come away convinced that no matter where you're from, there's a chance your ancestors leveraged the wound- healing properties of medicinal fungi. However, I would recommend caution about attributing properties to each mushroom species mentioned given that it is possible mushrooms were misidentified as similar species (either by the ethnobiologist or the interviewee), and that changes in taxonomy and nomenclature may have occurred. Finally, it is important to note that historical use of any fungi is not a recommendation for medicinal use today.

In my foray for reports of wound-healing fungi, one group of mushrooms surprised me most with its extensive history: the humble puffballs. Native peoples of North America used puffballs and their spores for healing all sorts of wounds. In my research, most reports refer to mushrooms in the Lycoperdaceae like species of *Lycoperdon, Calvatia,* and *Bovista,* but ethnomycologists report essentially all the puffball-esque fungal groups as having been used to improve outcomes after certain injuries including stalked puffballs of Agaricaceae *(Tulostoma* and *Battarrea)*, earthstars in Geastraceae *(Geastrum)*,[2] and earthballs in Sclerodermataceae *(Scleroderma)*.[3] Many First Nations of modern-day Canada and the United States used the powdery mature fruit body of Lycoperdaceae puffballs and/or their spores to aid clotting for nosebleeds, cuts and other bleeding wounds. A common use of spores of *Lycoperdaceae* and *Geastrum* species was as a styptic on newborn infants' umbilical cords.[2] Other reported wound-healing uses for *Lycoperdon* species are the application of gleba or spores to limit infection and improve healing of burns, infections and sores. Although mature puffballs and spores seem to have been the most common remedies, younger immature puffballs were also often dried, powdered and used for wounds or sores.[2] Puffballs were applied as bandages by some Indigenous peoples like the Inuit at Nunavik with *Lycoperdon* species,[3] and the Cree are reported to have applied dried slices of *Calvatia*

Our ancestors didn't have the broad body of scientific knowledge or analytical equipment that we have today, but this didn't stop them from discovering the antibiotic, antifungal, anti-inflammatory, styptic pro-healing properties of many medicinal mushrooms.

gigantea to bleeding wounds.[4] Some peoples, like the Kwakiutls and Mohegans, developed composite wound dressings of puffball spores, spiderwebs, and sometimes additional biomaterials like certain tree barks.[2] Maybe it's not quite a wound-healing application, but the inner flesh of younger puffballs was used by some peoples to remove objects stuck in their eyes.

Puffballs aren't the only fungi with recorded historical usage for wound healing in North America. To stop bleeding, many Northern Plains peoples used the aromatic bracket polypore *Haploporus odorus* as a styptic.[3,5] Peoples in northwestern North America are also reported to have made a poultice (i.e., a wetted mass of material applied to a sore or wound) out of old man's beard lichen *(Usnea longissima)*.[6] Another less directly fungal wound-healing application was known to the Inuit of Nunatsiavut who would harvest certain boletes that often house fly larvae (maggots) which were used to clean wounds.[3]

While it is abundantly clear that North America's Indigenous populations leveraged the styptic, pro-healing powers of mushrooms, there are plenty of reports of other cultures around the world using fungi for wound healing. The use of puffballs for this purpose was widespread, with reports from Nigeria, India, the Balkan peninsula,[7] Nepal,[8] and Japan.[3] Polypores have several other reports of being utilized as a wound-healing technology by Indigenous cultures, including *Fomitopsis betulina* used as a styptic in Russia, Poland and other Baltic countries. *Fomes fomentarius* was pounded and moistened and then applied to wounds to stop bleeding in many European cultures, India, and Siberia. Sclerotium of the tiger milk mushroom *(Lignosus rhinoceros)* was used to treat wounds in Malaysia.[7] *Podaxis pistillaris* in India[9] was applied to burns. In Rwanda, *Pisolithus arhizus* was used to treat a variety of wounds.[10] According to David Arora, *Panellus stipticus* has been reportedly used, as the name suggests, as a styptic.[11] Not to be outdone by all these basidiomycetes, several representatives from Ascomycota have historical use in wound healing including King Alfred's mushroom *(Daldinia concentrica)* in India[9] and yellow morels *(Morchella esculenta)* on the Indian subcontinent[7], with both being applied to a variety of wounds as a dried powder. In the Middle East, an aqueous extract of the desert truffles of *Termania* and *Terfezia* is prepared by boiling truffles and is used to treat various eye infections and conditions such as trachoma.[12] An overview of wound-healing fungi would not be complete without mentioning molds like those that produce the famous antibiotic penicillin. I could not find any ethnomycological reports of mold use; however, references to the use of mold on foods to treat wounds exist in ancient Greek, Chinese and Egyptian cultures.[13]

No matter where you're from, there's a chance your ancestors leveraged the wound-healing properties of medicinal fungi.

I've provided many examples here, but for more specific information on the many peoples, mushrooms, and uses, the reader is encouraged to comb through my sources (listed below) as there are too many examples to include in a single article (sources # 2, 3, and 7 have nicely organized tables). Also worth noting is that many of these mushrooms had further significance beyond wound healing; some have cultural or spiritual significance, some were used for food, and some as commodities. Given that published ethnomycological reports don't even begin to cover a fraction of the overall Indigenous knowledge, many other fungi were likely used in wound healing throughout history.

As the mushrooms discussed above cover such a wide range of fungal taxonomy, it makes one wonder what other mushrooms might possess wound-healing properties.

Likewise, the myriad mushrooms used for wound healing in ancient civilizations call for laboratory or clinical studies to determine their efficacy and optimal dosage. A mushroom's maturity level may also be an important factor. And then there's the question of fruit body versus mycelium. We need to know which molecules in mushrooms contribute to the wound-healing process. Stay tuned for the next edition of the *Mycophile* for a follow-up article diving into these questions!

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NAMA

Club Spotlight

Alabama Mushroom Society and its Magical Mycelial Faire

Alisha Millican, NAMA At-Large Trustee

The Alabama Mushroom Society (AMS) continually experiences the power of mushrooms. That's why its board of directors wanted to host an educational mushroom festival or, to emphasize the enduring and expanding mycological magic, a "faire." As we searched for an appropriate location, a moment of such magic arrived: AMS member Billy Beane emailed an offer to hold the event at the park he manages: Lake Howard in Sylacau-ga, Alabama. Billy loves the mushrooms he sees on his strolls through the park's woods. Thus, the inaugural Alabama Mushroom Festival was held Oct 8-9, 2022, at stunning Lake Howard in Sylacauga, Alabama.

When the gates opened on Saturday, a line of cars awaited, demonstrating that the power of our mycelial network reaches far. 522 attendees made their way to a table to make a name tag and place a pin on a map showing where they came from. We saw that mushroom enthusiasts from all over the country and world had made the trek, including visitors from Germany and Argentina.

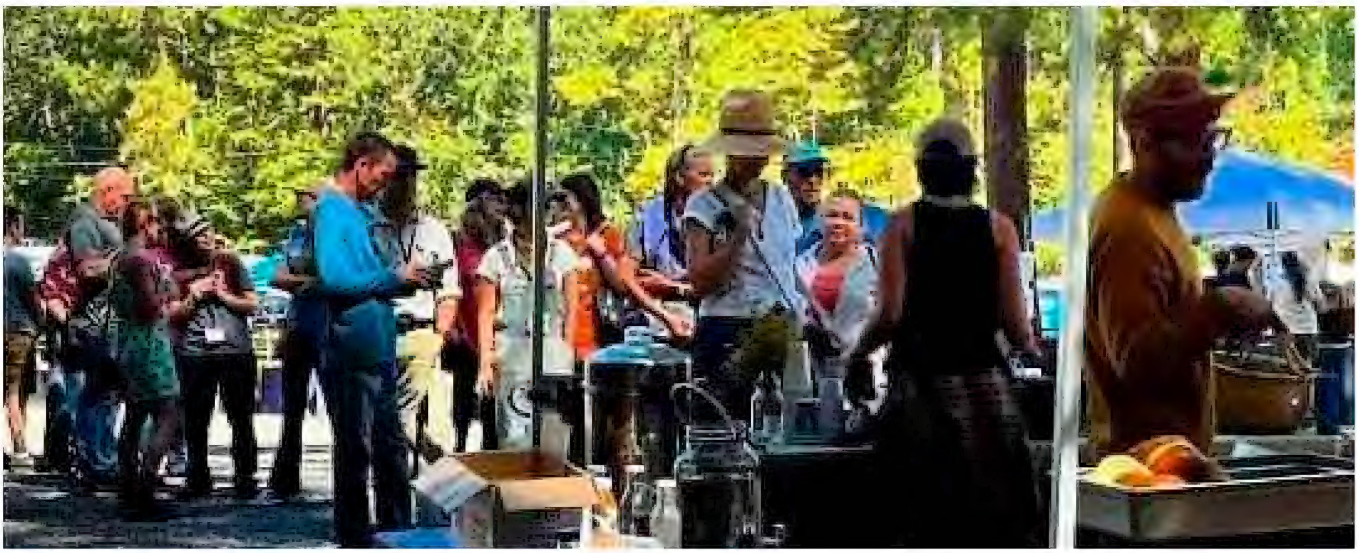
We assembled an inspiring lineup of 11 speakers, including Alan Bessette, Arleen Bessette, and Alan Rockefeller, covering topics like native plants, lichens, polypores, cultivation and more.

Since it's not a faire without a market, guests perused the wares of 30 vendors selling everything from paper and journals made with mycelium and spores to pottery, fresh mushrooms and grow blocks, and candles with

From left, Arleen Bessette, Alabama Mushroom Society founder Anthoni Goodman, Alisha Millican, Alan Bessette

mushroom-inspired scents. And who can pass up faire food? The vegan mushroom-centric food served by Clay Ehmke and his crew from The Haunt in Savannah, Georgia, received high praise. The line to purchase his gourmet meals lasted all weekend, and the consensus was that it was well worth the wait!

The Alabama Mushroom Society was founded as a 501(c)(3) in 2018 and our mission is to educate the public about mushrooms, their identification, various uses, and scientific, culinary, and environmental value while prioritizing safety and advancing the science of mycology. In keeping with this mission, the faire focused on education. We vouchered all the collections at the foray to be archived between the herbaria at Auburn University and the University of West Alabama. We sequenced DNA of all the collections; this data will be uploaded to GenBank and made available to the public. We sequenced and vouchered a total of 229 specimens!



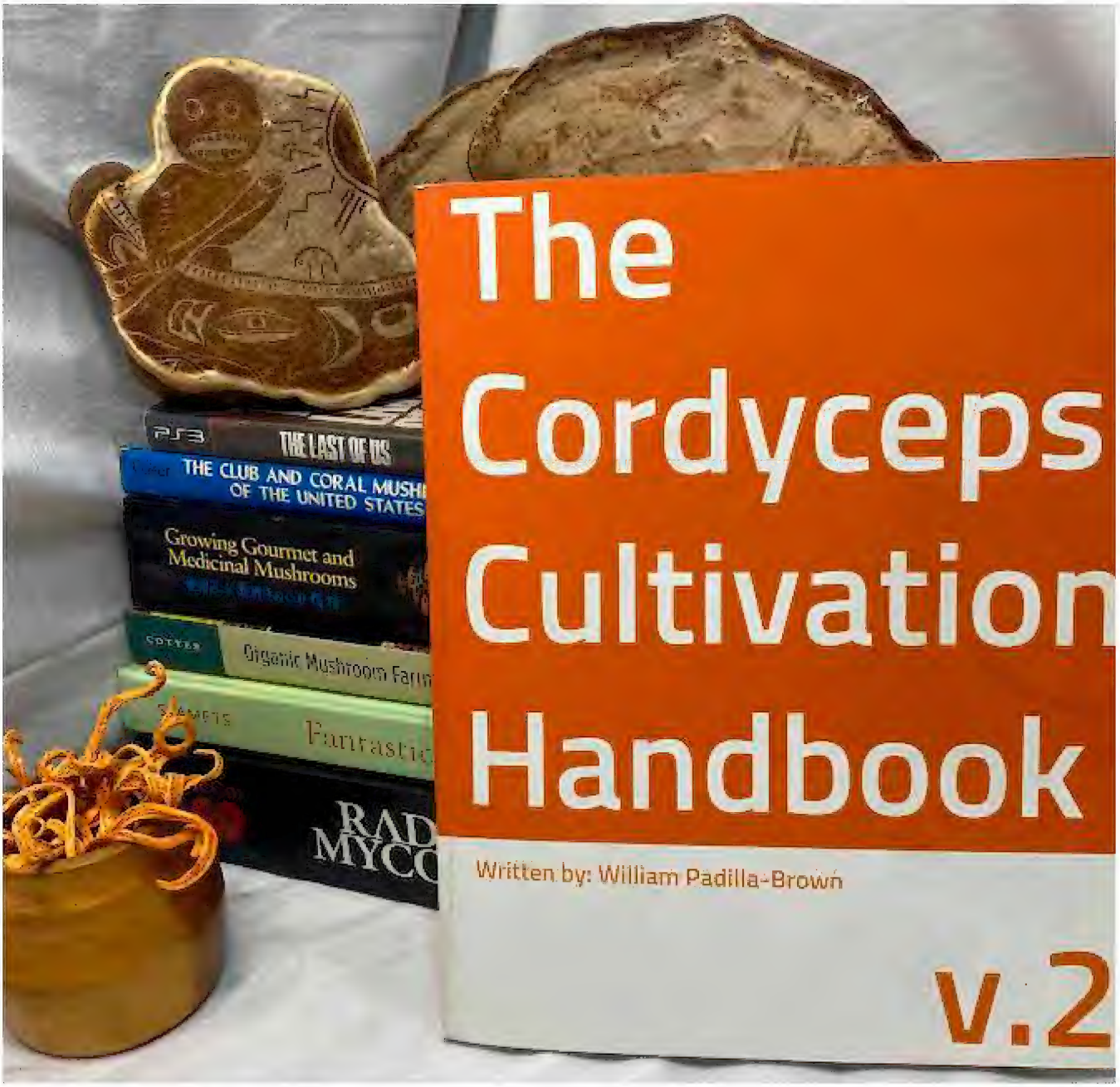
You, too, can whisk yourself away to our gathering. Thanks to the success of our first faire, we have found a bigger location to accommodate everyone who wants to come, learn about fungi and commune with like-minded individuals. We are excited to hold the 2023 Alabama Mushroom Faire at Camp Liberty in Battleground, Alabama, October 7-8, 2023. This location has 20 gorgeous acres of hardwood valley: home both for fungi and excellent accommodations for us! A beautiful new building will house our presentations. There are optional bunks for rent by travelers and plenty of room for tent campers; it offers restrooms, showers, and Wi-Fi throughout.

Our speaker lineup includes David Lewis, Walt Sturgeon, Jay Justice, Gary Gilbert, speakers from both the Matheny Lab at the University of Tennessee and the Smith Lab at the University of Florida Gainesville, Django Grootmyers and Rosanne Healy, respectively. Harte Singer will represent the Fungal Diversity Survey and speak on DNA sequencing from a citizen scientist's perspective. The curators of the herbaria at the University of Auburn and West Alabama University will both be present: Curtis Hansen and Kevin England, the former doing a walk and talk on lichens that was very popular last year. Several locals will join us: Jesse Akozbek of Feral Foraging will teach tree identification, Tim Pfitzer of Magic City Mushrooms will speak on Wild Edibles of the South and Emma Gowin of Gowin Valley Farms will do a mushroom cultivation presentation. Additional speakers may be added. Presentations will be geared toward all skill levels, from the beginner to the seasoned fungiphile. The big foray will begin at 11am on Saturday, where knowledgeable leaders will guide groups through the woods. Fungi will be documented and collected. Specimens will be deposited at the ID tables, where lead mycologist Jay Justice and his team will identify them. Collections will then be dried for vouchering at the herbaria at the University of Auburn and the University of West Alabama.

The Alabama Mushroom Faire offers a fantastic opportunity to learn from some brilliant minds in the fungi world, to visit and laugh with friends old and new, and to appreciate all the charms that fungi wield to win us over—their beauty, their flavors, their mysteries.

Something is calling you here. To learn more and purchase tickets, visit alabamamushroomsociety.org/AMF.

NAMA READS



Growing with William Padilla-Brown: A Review of *Cordyceps Cultivation Handbook Volume II*

Zebediah Raney

I met William Padilla-Brown and Alan Rockefeller at a pair of classes Padilla-Brown was hosting in Harrisburg in February 2020. We had already preordered the *Cordyceps Cultivation Handbook, Volume II*; in fact, our lab had been following the work of Padilla-Brown and that of Ryan Paul Gates from our farm in Colorado for at least six months, and our whole purpose in attending the class was to learn the DNA work Padilla-Brown covers in this book to achieve greater success with our own breeding projects.

After the class, I had an opportunity to discuss the book with the author, and he revealed some of the hurdles and roadblocks of self-publication. Not only is the initial cost prohibitive, but the actual writing, proofing, editing, and keeping pace with the constantly evolving nature of research – and mycology in general – make a book's completion a moving target at best.

When I returned to Colorado, I found my copy and the pandemic shutdown arriving on my doorstep together. I was privileged to read the book with the insight into the author's feelings about the finished product that I had just acquired.

The book begins with a wonderfully complete history of *Cordyceps,* starting with the earliest abstract historical references and going all the way to (semi)modern groundbreaking work in the field. The citation list for the first chapter alone is enough to keep anyone seriously interested in any part of the *Cordyceps* cultivation process busy for weeks. The book then leads into a colorful description and breakdown of the *Cordyceps* organism itself, using simple language to illustrate the fundamental differences between this organism and other entomopathogenic fungi, while providing a brief list of the compounds present in the typical *Cordyceps militaris* culture along with some studies showing potential differences between whole stromata and mycelial biomass extracts. The reader is then led to ask unconventional questions and approach this organism's compounds originally and scientifically instead of following largely dogmatic processes repeated ad nauseam in many clandestine mushroom communities. *The Handbook* then gives some helpful insights into how to "Stalk the Wild Cordy," arming you with the tools, information on host species, and key environmental characteristics to stalk successfully in the woods.

True to its name, the real meat and potatoes of the *Handbook* is in the cultivation section. The author covers the differences between a normal mushroom farm and a *Cordyceps* farm, sharing the best knowledge available at the time. This section provides a time capsule of his efforts to the date of its publication, which is even more valuable given the progress made since then. The methods he covers here are accessible to everyone, from still-air-box to flow hood, or closet-to-commercial-scale applications. Padilla-Brown explains how modularity is key, discussing low-tech solutions to common problems and suggesting variables with which to experiment. The main cultivation section covers the following:

Substrate in-depth, including regional options for bulk medium, nutrient requirements and their effect on compound production, different creative sources for the necessary nutrients, and experimental recipes, from low-tech supplementation to lab-grade ingredients.

Container Experimentation, with in-depth descriptions of several containers and their independent variables in fruit-body production.

Breeding, starting with a basic description of why and how phenotypic-trait expression works, multiple techniques for isolating ascospores and their respective problems, molecular identification of mating type loci through PCR work, and blind pairing.

Pests, giving insights on noticing and dealing with common *Cordyceps*-specific farm issues, pests, and contaminants, along with some clever ways to control them.

At the end of this section, the reader is given recipes for using their harvest – because what would be the point of growing this amazing organism if you never get to enjoy the fruits of your labors?

Serious critics could easily tear this book apart for its numerous typos, but something about the flaws speaks to the author's ability to make all aspects of his journey accessible and realistic to anyone, from any background or community, including basic backyard mycology, to breeding entomopathogens, to PCR work (which recently became extremely relevant), to self-publishing. Something of a perfect mycological metaphor, each page describes a different aspect of the symphony that is *Cordyceps*, and on almost every page is a minor flaw, kerning issues, missing punctuation, improper justification, etc. Every blemish is a testament to the struggles each cultivator goes through in our labs, whether we're cleaning up clones or lighting our arms on fire trying to sterilize a scalpel. Each flaw is a reminder that this work is achievable and that persistence will yield results; those results validate Padilla-Brown's work and underscore the ability of citizen science to increase mycological literacy.

In the time since the release of the book and the beginning of the pandemic, there have been too many new updates in *Cordyceps* farming to list here, but many of those advancements started just like a mushroom culture starts.

Let's consider Padilla-Brown's research in terms of *Cordyceps* culture, and each class he teaches as another inoculation point, each student a Lepidoptera pupa, some substrate more fertile than others, some microcli-

mates more suited to successful fruiting, all expressing a phenotypic varietal specific to the individual. The only logical conclusion is for the field to move past colonization and fruit. Some of those fruits will be variegated or deep red. Some won't produce perithecia or ascospores. All will express different traits.

Any mycology book tends to be outdated within months of publication, and this one isn't exempt from the relentless treadmill of ongoing research, but the speed at which it was outdated testifies to the progress the author helped all of us make in this hyper-specific niche of the mushroom cultivation hobby. The book closes with a discussion of the future of *Cordyceps*, and by the time it appeared on my front porch, most of the opportunities Padilla-Brown mentioned had already been pursued either by the author or someone in the *Cordyceps*-cultivation community. An update is warranted so that we can again collectively glimpse the future of farming this organism. The author's farm produces massive canopies and he experiments constantly; perhaps the community can look forward to an update soon.

Since my original purchase of the preorder, I've learned the book is no longer available in print except for a few copies on Northspore's website, but it is available online free for a suggested donation. I have mixed feelings about this; on the one hand, mushroom field guides tend to become quickly outdated in one way or another since DNA sequencing constantly restructures our understanding of taxonomy.

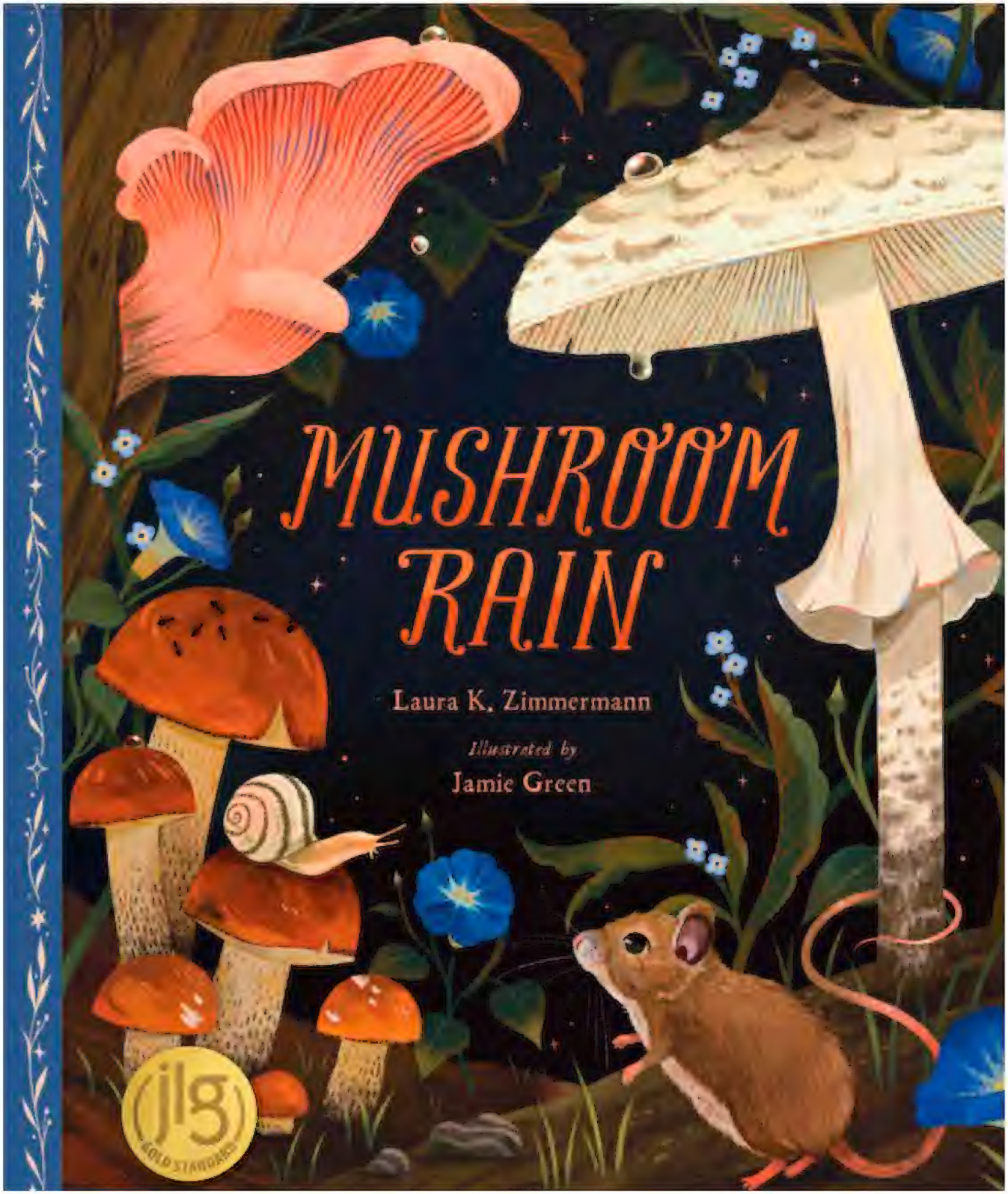
Now that this book is being provided free online, it can be easily updated and is nearly universally accessible. On the other hand, I love to collect books! I lament that more people won't see the beautiful "artisan" contrast of the hard work and flaws evident throughout because it offers a view directly into the author's lab and process.

This book is so condensed and approachable that it's difficult to review without giving away the most important information. Go read it. It's short and sweet, easily tackled in a few hours. If you follow its step-by-step instructions, you will get results. Pick a recipe, order culture from Padilla-Brown himself at MycoSymbiotics or from another trusted source such as Jeff Manganaro at Appalachian Gold Fungi - Etsy or Ryan Paul Gates at Terrestrial Fungi.

Remember that failure is an inevitable result on the way to progress. Use the map provided to find the flaws in your process. Join the *Cordyceps* Cultivation Group on Facebook, ask questions and use the search function; everyone will be extremely responsive and helpful; Padilla-Brown has personally contributed ideas, information, and inspiration to the success of our growing cordy farm. I guarantee the issues you initially encounter won't be unique and can be diagnosed and solved in this group.

In short, Padilla-Brown's work has made it possible for everyone to succeed at cultivating *Cordyceps*, regardless of scale. The value of his work is a function of your own adaptability and desire; the map is not the terrain. Even if you're a seasoned cultivator, you stand to gain something from the citations list, at the very least. I suggest anyone with a cursory interest in this organism, or in its author, add this book to the mushroom section of their library.

Here are the links to the v.1 and v.2
V1. *Cordyceps Cultivation Ebook* (mycoshop.net)
V2. physical *The Cordyceps Cultivation Handbook* V.2 – North Spore
V2. Digital https://drive.google.com/file/d/1uxxcjPjU1uTAuUgC9DnHY4jZlbbNBKPk/view?usp=gmail



Mushroom Rain: A Daughter-Mother Book Review

Saphirra Loiland

While reading *Mushroom Rain*, I really enjoyed how the book had a lot of uncommonly known mushrooms like devil's fingers and bird's nest fungus. I love that there are creatures and bugs around to show that animals and insects munch on mushrooms, too, even the ones that are not edible to humans. I like how it talks about spores being spread from place to place. That is important for adults and children who want to learn

more about how mushrooms work. The illustrations are aesthetically pleasing and the wording is beautiful. The colors are very vibrant and realistic. I enjoyed the last pages that listed facts giving details for kids in my age group. I am 12 years old. I wish this book included the common names and Latin names of the mushrooms that are pictured because that really interests me. I would say the age range for this book would be good from ages 7 to 14. That is a pretty big range, and I like that. I love that there are more than just mushrooms. It also talks about plants, creatures, and the rain! This book is amazing!

Asia Loiland

Mushroom Rain was written by Laura K. Zimmerman and illustrated by Jamie Green. This book is captivating and beautifully written, combining elements of realism, nature, imagination and adventure. It describes how mushrooms contribute to plants, animals, insects and even the weather. The book includes a spore-print activity for parents or guardians to complete with their young ones. It includes a glossary with more information and facts about mushrooms' role in the ecosystem. This book also includes an educational mushroom diagram, questions to ask children and a list of further reading to spark more curiosity. The illustrations are equally captivating. The artwork helps young readers immerse themselves in the fantastical world of plants and fungi to enhance their understanding of the world around them. Green's artwork brings the mushrooms to life with vibrant colors and intricate details. This book imparts the message of the importance of nature and the need to protect it. *Mushroom Rain* will leave a lasting impression on young readers. The addition of all the wildlife and plants is fantastic. While it is a beautifully written and illustrated book, it may not be suitable for very young readers due to its complexity. The story may require some adult explanation and guidance to help children fully understand its message. That said, my four-year-old daughter loved the mushroom pictures and the colors. I have read it to her multiple times, even if she doesn't understand it yet. The end portion of the book is aimed at older children. *Mushroom Rain* is a good book to have around for children of all ages and a must-read for young readers who are curious about the natural world and eager to explore the wonders that await them!

About Our Mycophile Contributors

Trent Blizzard has lived in the East, West and Midwestern U.S. A website designer by trade, Trent fell in love with Kingdom Fungi – and with his wife Kristen – in a modern myco fairy tale. Together, they are Modern Forager. They are authors of *Wild Mushrooms: A Foraging Guide and Cookbook* and also self-published *Burn Morels*. They relocated from Colorado to northern Wisconsin in the Fall of 2021 but spend time on the Oregon Coast every winter to keep foraging year around! Trent enjoys studying digital maps, chasing burn morels, making pottery, cultivating mushrooms and making maple syrup.

Mycophile Editor Barbara Ching is Past President of NAMA. Before settling into a career as a Professor of English, she wrote occasional features for the *Virginian Pilot* (Norfolk Virginia, and book reviews and long-form reporting for the *Memphis Flyer*. She is a member of the Minnesota Mycological Society.

NAMA_MX23 Event Organizer Zachary Hunter is a lifelong devotee to flavor, a professionally trained chef obsessed with mushrooms and uncovering the unknown with regards to edible mushroom chemistry and physiology. He is a member of NAMA's Culinary Arts Committee. He lives in Oaxaca, Mexico with his wife Kim, where they run MycoAdventures in the mountains of Oaxaca and beyond. Check out his blog for some interesting "food for thought!" www.thefungivore.com/index.html

Hayden Johnson is a PhD candidate in biomedical engineering at the University of Memphis, where his work involves measuring metabolites in biological samples and developing machine learning data-processing methods. He has a passion for surveying fungal biodiversity, especially local species, and has led mushroom walks for several Memphis-based conservancies. Hayden has volunteered as a DNA sequence validator for FunDiS and currently serves on NAMA's Medicinal Mushrooms Committee. He also shares his best fungal finds on Instagram (@mycomemphis) and uses iNaturalist to log biodiversity (username: hayden127).

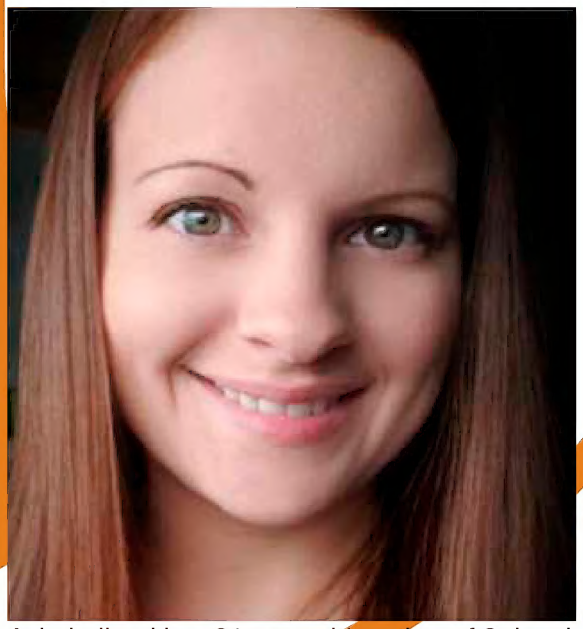
Melany Kahn started hunting for mushrooms in Vermont in 1968 when her family bought a farm in West Brattleboro, VT. For the last 20 years she has volunteered to teach children how to forage for wild mushrooms. She attended Wesleyan University (BA, English/Creative Writing). She holds a master's in social work from Boston College, and an MFA in Film from The Tisch School at NYU where she met her illustration collaborator, Ellen Korbonski. Melany serves on the Education Committee of NAMA, sits on the board of Monadnock Mushroom Unlimited and is a member of several NAMA-affiliated clubs. She lives in New Hampshire and Vermont with her husband and children, 3 cats and 17 chickens. They co-own The Porch Cafe in Brattleboro. You can find her leading mushroom walks or foraging at every opportunity. *Mason Goes Mushrooming* is her first book.

Dr. Tess Kenney is a member of NAMA's Visual Arts Committee, is currently the Chair of the Visual & Performing Arts Department at Concordia University Wisconsin - Ann Arbor and the Graphic Design Specialist who designs the North American Mycological Association's publicatioin *The Mycophile Quarterly.* Kenney is also the former President of the Wisconsin Mycological Society and in that role worked with the WI Dept of Agriculture as well as her board to estab-lish the first Wisconsin Fungi Certification program, was one of the main organizers for the NAMA/WMS Regional Northwoods Foray in 2022 and advocated strongly for Fungi Education in her state throughout her tenure at WMS.Tess is also the Vice President of the Milwaukee Institute of Art & Design (MIAD) Alumni Association as well as an actIve member of the Milwauukee Print Alliance and Anchor Press 3. Her latest series of paintings, etchings and ceramics is entitled *The Forest Floor*. You can find her work on exhibit at the Kreft Gallery in Ann Arborr in the Fall of 23. Tess will be presenting a series of workshops and presentations at Mycelium Mysteries in 2023 focusing on the work of the esteemed autthor, painter and scientist Beatrix Potter.

Dave Layton serves as NAMA's First Vice President and plays upright bass with the Unidynes, recently inducted into the Iowa Rock and Roll Hall of Fame. He hopes to write a book about his mushroom mistakes. As you might imagine, there's a lot more to say. He is a member of the Prairie States Mushroom Club and a commissioner of Volunteer Iowa (ICVS), which is responsible for administrating Iowa's National Service and volunteer programs.

Dr. Patrick Leacock has worked extensively as a parataxonomist, with a focus on fungi of the Midwest and specifically the Chicago region, where he served for many years as mycologist for The Field Museum of Natural History. He served as Chair and guiding force of NAMA's Voucher Collection Project for 22 years and continues to serve that endeavor in a significant advisory capacity. He received the NAMA President's Outstanding Service Award in both 2011 and 2019. You can learn more about Patrick's work here: https://www.mycoguide.com/

Saphirra Loiland is a 12-year-old middle school student in 8th grade. She was awarded a junior mycologist prize at the Barronett Tri-County Foray in September 2022. She is very athletic and loves mushroom hunting.



Asia Loiland is a 31-year-old mother of 2 daughters, homeschool teacher,food recipe creator and forager. She loves all things outdoors and spending quality time with family and friends.

Alisha Millican is President of the Alabama Mushroom Society and an At-large Trustee of NAMA, a Master Gardener and volunteer with the Fungal Diversity Survey.

Cover artist Karen Milnes has a studio art degree from the University of Virginia with a concentration in printmaking. Cabin Critter Designs is her print shop and studio in the Highlands of Virginia, specializing in logo design, functional art and home décor. Often inspired by her surroundings, her work trends towards natural subjects and colors and spans many mediums, but she is always willing to try something new.

Bruch Reed is proud to serve as chief operating officer for NAMA. Following a youth in which his family taught him mushroom-pursuing basics, he lucked into friendships with several of our time's mycological leading lights, including Dr. Patrick Leacock, who brought him into the Illinois Mycological Association in 2007 and through whom he met the late, great Gary Lincoff, as well as Dr. Britt A. Bunyard, who generously invited him into the magical world of far-flung forays and appointed him to the editorial board of FUNGI Magazine. In recent years, he has been honored to work with successive Wisconsin Mycological Society presidents Dr.Theresa "Tess" Kenney and Melissa Perry-Klotka, as well as renowned russulogist Tavis Lynch, to develop and teach the Wild Mushroom Certification Course for the State of Wisconsin. Besides pursuing fungi, he is a secret plant nerd who grows a few hundred orchids in his Chicago apartment, and acts.

Fisherman, forager, farmer and co-owner of Mile High Mycology, Zebediah Raney wears many amateur hats. Growing bulk *Cordyceps*, working with Colorado native species of mushrooms to complement the permaculture scene, contributing to FunDiS, sequencing locally foraged wild mushrooms, studying history and philosophy, and constantly seeking to increase scientific literacy. Doing everything possible to leave the advertising day job behind and spend more time in the lab.

Allein Stanley served as NAMA President from 1995 to 2000. She is shown here receiving the 2010 NAMA Award for Contributions to Amateur Mycology from the late Gary Lincoff

Jess Starwood is the author of *Mushroom Wanderland: A Forager's Guide to Finding, Identifying, and Using More Than 25 Wild Fungi* (Countryman Press, 2021). She is the editor Sporeprint, Newsletter of the Los Angeles Mycological Society, and serves on the Board of Directors of the Arizona Mushroom Society. You can learn more about Jess from her website: https://jstarwood.com/

Rose Tursi serves as Chair of the NAMA Visual Arts Committee and is an illustrator by profession. You can see her work at www.tursiart.com. An Air Force brat turned Army spouse, she's lived all over the place and has been involved in various myco clubs over the years, including South Sound Mushroom Club in Olympia,, Washington as well as the Wisconsin Mycological Society. Rose's hobbies include ceramics and other arts & crafts, permaculture, foraging, gardening, cook-ing and cultivating gourmet mushrooms. Rose will be presenting a series of workshops and presentations at Mycelium Mysteries in Wisconsin in 2023 focusing on the work of the esteemed autthor, painter and scientist Beatrix Potter.

Kathy Yerich is a longtime dedicated member both of NAMA and of the NAMA-affiliated Minnesota Mycological Society (MMS) and currently serves as Chair of NAMA's Marketing Committee. She spearheaded the creation of MMS' Marek Turnowski Memorial Scholarship, on which NAMA's new Annual Foray Scholarship Program is based. She lives near Minneapolis with her patient and hilarious husband, Fred Yerich.

Liz Weinstein is a photographer, printmaker, doodler and mycology enthusiast from Chicago, with a BFA from Columbia College and a Masters of Library Science from the U of I Champaign-Urbana. She's the Survey Chair for the Illinois Mycological Association, a member of the Wisconsin Mycological Society, serves on the NAMA Visual Arts Committee, and is a volunteer with the Field Museum Herbarium where she works on sampling the DNA of fungi and lichen of the Chicagoland area. She has also been selected as a 2023 Isle Royale Artist-in-Residence, where she will be photographing, surveying, and documenting mushrooms and fungi of the island's unique biota. You can check out her daily fungi photos on Instagram: @mushroomphotography.